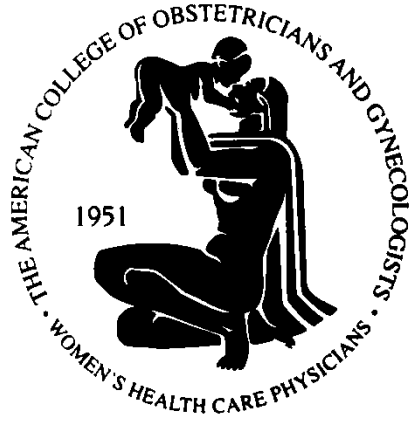



**The American College of Obstetricians and Gynecologists**

**Poster Sessions**

**Monday, May 17, 2010**
**San Francisco, CA**

Monday, May 17

## Contraception / Family Planning

1 **Immediate Versus Delayed Postabortal Copper T 380A Intrauterine Device Insertion in Cases Over 12 Weeks of Gestation**
*Miriam Cremer, MD, MPH, Christine Weiselberg, NP, Kimberley Bullard, Michael Moleai, MD, Reagan McDonald Mosley, MD, MPH*

2 **Breast Cancer Risk and Use of Levonorgestrel-Containing Intrauterine Devices: Results From a German Case–Control Study**
*Jüergen Dinger, MD, PhD, Anita Assmann, MSc, Carolyn Westhoff, MD, Klaas Heinemann, MD, MBA, PhD, Kristina Bardenheuer, MSc*

3 **Immediate Placement of Intrauterine Devices After First-Trimester and Second-Trimester Pregnancy Termination**
*Michelle C. Fox, MD, MPH, Anne E. Burkem, MD, MPH, Julia Oat-Judge, BA, Kathyrn Severson, BA, Rameet Singh, MD, MPH, Roxanne Jamshidi, MD, MPH*

4 **Can the Bleeding Pattern During Consecutive Use of the Levonorgesterel-Releasing Intrauterine System Be Predicted?**
*Oskari M. Heikinheimo, MD, PhD, Kristina Gemzell-Danielsson, MD, PhD, Leo Plouffe, PhD, Michael Kunz, PhD, Pirjo Inki, MD, PhD*

5 **Improving Adherence With Oral Contraceptives Using Daily Text-Message Reminders**
*Melody Y. Hou, MD, MPH, Alisa B. Goldberg, MD, MPH, Erin Kavanaugh, MPH, Jennifer Fortin, MPH, Shelley Hurwitz, PhD*

6 **Women's Self-Efficacy in Future Contraception Use and Continuation at the Time of Abortion**
*Tushani Illangasekare, Abby Sokoloff, MPH, Christine Dehlendorf, MD, MAS, Jody Steinauer, MD, MAS, Michelle Sriwongtong, MSc, Rachna Vanjani*

7 **Estradiol Valerate–Dienogest Oral Contraception for Heavy or Prolonged Menstrual Bleeding: A Pooled Analysis**
*Jeffrey T. Jensen, MD, Andrea Machlitt, Ian S. Fraser, Susanne Parke, Uwe Mellinger*

8 **Intra-Vaginal Non-hormonal, Contraceptive Ring. Safety Acceptability and Theoretical Efficacy Study**
*Jeanetta Malanowska-Stega, MD, Elena Reynoso, MD, Giuseppe Del Priore, MD, MPH, Shalaby W. Shalaby, PhD, Sheila Nagatomi, MS, Susan Richman, MD, MPH*

9 **Improving Hysterosalpingogram Confirmatory Test follow-up After Essure Hysteroscopic Sterilization**
*Margaret M. McElhinney*, BS, *Christopher G. Olson, MD, Kara N. Goldman, MD, Maryam Guiahi, MD*

10 **Safety and Tolerability of Medical Versus Surgical Termination of Pregnancy for Fetal Anomalies**
*Mollie T. Miller, DO*

11 **Diabetic Latinas and Reproductive Behavior: Validity of the Life-History Calendar Method**
*Laura Nezworski, MD, Jeanelle Sheeder, PhD, Stephanie Teal, MD, MPH*

12 **Knowledge and Usage of Emergency Contraception in Women Seeking Abortions**
*Gretchen A. Reinhart, MD, Laura M. Goetzl, MD, MPH, Sydney E. Cummings, MS*

13 **Bleeding Patterns in Women Who Received Immediate Postabortion Levonorgestrel-Releasing Intrauterine System Placement**
*Michelle Sriwongtong, MSc*, *Abby Sokoloff, MPH*, *Eleanor Drey, MD, EdM*, *Jody Steinauer, MD, MAS*, *Rachna Vanjani*, *Tushani Illangasekare*

14 **Prevalence of Mood Symptoms in Women Who Present for a Therapeutic Abortion**
*Rachna Vanjani*, *Abby Sokoloff, MPH*, *Jody Steinauer, MD, MAS*, *Michelle Sriwongtong*, *MSc, Tushani Illangasekare*

15 **Women's Awareness and Use of Folate Supplements Prior to and During Pregnancy: A Global Perspective**
*Ariane Von Stenglin, MD*, *Leo Plouffe*, *Sandra Buchwald*

## Education

16 **Teaching Geriatrics to Gynecology Residents: Are ACOG Learning Objectives Being Met?**
*Ilana B. Addis, MD, MPH*, *Kathy Schwarz, MD*

17 **The 50 Most Frequently Cited Ob-Gyn Articles Over the Past 50 Years**
*Justin S. Brandt, MD*, *Stephen T. Chasen, MD*

18 **Assessing Professionalism in Residency Applicants**
*Justin S. Brandt, MD*, *Stephen T. Chasen, MD*

19 **Assessing Professionalism in Residency Applicants: Interrater Agreement**
*Justin S. Brandt, MD*, *Stephen T. Chasen, MD*

20 **Education Strategies for Teaching Vacuum-Assisted Vaginal Delivery to Residents**
*Nelli Fisher, MD*, *Ashlesha Dayal, MD*, *Dena Goffman, MD*, *Jyothshna Bayya, MD*, *Peter S. Bernstein, MD, MPH*, *Setul Pardanani, MD*

21 **Evaluating Patient and Healthcare Provider Response to an Online Cord Blood Patient Education Program**
*Marra S. Francis, MD*, *Heather L. Brown, MS*, *Lesley Cerdan*, *Melanie L. Praught, MS*

22 **Development of a Web Site for the Dissemination of Information About Laborists**
*Debra Gussman, MD, MBA*, *Andrew Blechman, MD*, *Jonathan Baum, MD*, *WIlliam J. Mann, Jr, MD, MBA*

23 **Continous Glucose Monitoring as an Educational and Motivational Prenatal Tool**
*Cassandra E. Henderson, MD, CDE*, *Diane Aldapea, MD*, *Heynelda Marcano Vasquez, RN, BSN*, *Kevin C. Reilly, MD*, *Romany Gawargious Hana, MD*

24 **Perinatal Depression Content in Electronic and Print Textbooks From Relevant Medical Specialties**
*J. Jo Kim, PhD*, *Craig Garfield, MD*, *Kristin Suhr, BS*, *Ramune K. Kubilius, MALS*, *Richard K. Silver, MD*

25 **Exploring Factors Influencing Patient Request for Epidural Analgesia in a Latino Population**
*Francisco J. Orejuela, MD*, *Charles Green, PhD*, *Charlie Kilpatrick, MD*, *Sara Guzman, MD*, *Sean Blackwell, MD*, *Tiffany Garcia, MSII*

26 **Resident Education and Training in Female Sexuality: Results of a National Survey**
*Apurva B. Pancholy, MD*, *Angie Fellner, PhD*, *Catrina C. Crisp, MD*, *Linda Goldenhar, PhD*, *Rachel N. Pauls, MD*, *Steven D. Kleeman, MD*

28 **A Pilot Study of Video Game Usage and Laparoscopic Skills**
*Justin K. To, MD*, *Mark Levie, MD*, *Scott Chudnoff, MD*

## Ethics/Professional Liability/Risk Management

29 **Implementation of Competency Based-Recredentialing at a Large Urban Teaching Hospital**
*Adam P. Buckley, MD, Arnold Friedman, MD, Zoe Rodriguez, MD*

30 **Does Requiring Shoulder Dystocia Training for Hospital Credentialing Improve Outcomes?**
*Ronald T. Burkman, Jr, MD, Alexander Knee, MS, Carrie Bell, MD, Susan DeJoy, CNM*

31 **Influences of Operative Vaginal Delivery Safety Initiatives in Teaching and Nonteaching Hospitals**
*Michael L. Nix, MD, Elbert Whorton, PhD, Frank Mazza, MD, Judy Kitchens, MHA*

32 **QUIIM: Quality Through Reflection/Identification/Implementation/Measurement**
*Sharon O'Leary, MD, Laura Bozeman, BSN, RN, Robert Stager, MD, Ruth Churley Strom, RN*

## Gynecology

33 **Highly Specific Biomarker for Stratification of Patients With Equivocal Cytology and Human Papillomavirus Positivity**
*Colyn Cain, PhD, Elizabeth Light, Greg Endress, MS, Kerri Licari, Madhvi Upender, PhD*

34 **Incomplete Abortion Management in a Resource-Poor Setting**
*Chigbu Bright, Dr, MBBS, FWACS, Adaugo C. Onwere, Dr, MBBS, Chuks I. Kamanu, MBBCh, FWACS, Eziaha Chigbu, MS, HND, Stephen N. Onwere, Dr, MBChB, MMed*

35 **Routine Cervical Human Papillomavirus Genotyping Predicts HSIL/CIS: A Review of 545 Cases**
*John Compagno, MD*

36 **Intrauterine Procedures in Women Who Have Undergone Adiana Permanent Contraception**
*Seth J. Herbst, MD, Ted L. Anderson, MD, PhD, Thierry Vancaillie, MD*

37 **Effect of Baseline Menstrual Blood Loss or Body Mass Index on Menorrhagia Treated With a Novel Tranexamic Acid**
*Ken N. Muse, MD, Arkady Rubin, PhD, Bryan Hecht, MD, David F. Archer, MD*

38 **Laparoscopic Treatment of Endometriosis Using the 5-mm daVinci System**
*Ceana H. Nezhat, MD, Kimberly Kho, MD, Susan Kearney, MHSE*

39 **Adiana Permanent Contraception in Office is Functional Equivalent to its Operating Room Performance**
*James B. Presthus, MD, Joseph D. Zimmerman, MD, Peter K. Heinlein, MD, Thierry G. Vancaillie, MD, Thomas M. Price, MD*

40 **Rapid Quantitation of Menstrual Blood Loss From Feminine Hygiene Products**
*Gene Ray, PhD, Bruce Lee, MD, Dari Dadgar, PhD, Pamela Burnett, BS, Russ DeLonzor, Ying Li, PhD*

41 **High Prevalence of Chronic Pelvic Pain in Female Veteran Population**
*Tatiana V. D. Sanses, MD, Mari Wepprecht, MPP, ABD, PhD, Meghan Lynch, MD, Rebecca Gonzales, NP*

42 **Bowel Involvement and Stage of Endometriosis**
*Arathi Veeraswamy, MD, Asefjah Hossein, MD, Babak Hajhoseini, MD, Camran Nezhat, MD, Michael Lewis, MD, Sumathi Kotikela, MD*

43 **Is Same-Day Discharge of Laparoscopic Hysterectomy Patients a Safe Option?**
*Miya P. Yamamoto, MD, Eve Zaritsky, MD, Misa Perron-Burdick, MD, Ramon Yera, MD, Seth Kivnick, MD*

## HIV/AIDS Program

44 **Pregnancy Outcomes in a Perinatally HIV-Infected Population**
*Avishai A. Alkalay, MD*, *Karen Beckerman, MD*, *Rodney Wright, MD*, *Shilpi Mehta, MD*

45 **Human Immunodeficiency Virus (HIV) Testing Practices Among Obstetric Providers in Georgia**
*Andrew W. Helfgott, MD*, *Amy Goss, BS*, *Christeen Orfield, MSN*

## Infectious Diseases

46 **High-Risk Behaviors While Taking Depot Medroxyprogesterone Acetate: An Analysis of Chlamydia Infection**
*Deborah Bartz, MD, MPH*, *Alisa B. Goldberg, MD, MPH*, *Jennifer M. Fortin, MPH*, *Jessica Kremen*

47 **Association Between Vaginal Lubricant Use and Vaginal Microbiota: A Cross-Sectional Study**
*Alison A. Dormer*, *Kevin A. Ault, MD*, *Rebecca Brotman*, *Shara Karlebach*

48 **The Influenza Pandemics of 1918, 1957, 2009: Obstetric Consequences and Connections**
*Matthew J. Kim, MD*, *Adegoke Adeniji, MD*, *Joann Acuna, MD*, *Sherri Jackson, MD*, *Siegfried Rotmensch, MD*

49 **SIX 1 and EGFR as Potential Biomarkers for Cervical Dysplasia: A Pilot Study**
*Lisa B.Spiryda, MD, PhD*, *Alexis Banner*, *Amy Messersmith, BS*, *Kim Creek, PhD*, *Lucia Pirisi-Creek, MD*

50 **A Comparison of the Collection of the Chlamydia DNA Probe With and Without a Speculum**
*Sharon Beth Stechna, MD*, *Maryam Hedayatzadeh, MD*

51 **Methicillin-Resistant *Staphylococcus Aureus* is a Common Cause of Vulvar Abscesses**
*Andrea Ries Thurman, MD*, *David E. Soper, MD*, *Tiffany Satterfield, DO*

## Menopause

52 **The Effect of Omega-3 Fatty Acids on the Relief of Vasomotor Symptoms**
*Parastoo Farhady, MD*, *Patricia I. Carney, MD, William A. Hohman, MD, Matthew K. Hoffman, MD, MPH*, *Tina M. Grossman, BSN*

53 **Postmenopausal Women's Beliefs About Society's Perceptions of Midlife Sexuality: The Reveal Study**
*Michael L. Krychman, MD*, *Sheryl Kingsburg, PhD*, *Susan Kellogg Spadt, CRNP, PhD*

54 **Efficacy of a Combination of Concentrated Herbal Extracts in the Management of Vasomotor Symptoms**
*Chadwick Sael Leo, DO*, *Mark G. Martens, MD*

## Obstetrics

55 **Effect of Pelvic Support Belt on Puerperal Urinary Incontinence**
*Kohzo Aisaka, MD, PhD, Naoko Yamamoto, MD, PhD*, *Seiichiro Obata, MD, PhD*, *Yuichiro Miyamoto, MD, PhD*, *Yuji Ikeda, MD, PhD*, *Yumiko Ikezuki, MD, PhD*

56 **Changes in Methadone Maintenance Therapy During and After Pregnancy**
*Brittany B. Albright, BS*, *Lesley de la Torre, DO*, *Patrick Abbott, MD*, *Sylvia Price, RN, FNP*, *William F. Rayburn, MD, MBA*

57 **Maternal–Neonatal Outcome With *Staphylococcus Aureus* Rectovaginal Colonization**
*Omrou Alchyib, MD*, *David Tompkins, MD*, *Donald Morrish, MD*, *Iffath Hoskins, MD*, *Kell Julliard, MA*, *Nibel Ghanim, MD*

58 **Prenatal Discussion of Concerns Regarding Breastfeeding and Breastfeeding Initiation Rates**
*Karen Archabald, MD*, *Elizabeth Triche, PhD*, *Jessica Illuzzi, MD, MS*, *Lisbet Lundsberg, PhD*

59 **Switching from Magnesium Sulfate to Alternative Tocolytics: Impact on Outcomes and Hospital Utilization**
*Graham G. Ashmead, MD*, *Donald A. Brand, PhD*, *Padmalatha Gurram, MD*, *Patricia A. Patrick, MPH*

60 **Pregnancy Complicated by Diploid–Triploid Mosaicism**
*Tiki Bakhshi, MD*, *Brian T. Pierce, MD*, *Bruce R. Ball, MD*, *Christina C. Hill, MD*, *Donald J. Gloeb, DO*

61 **Vaginal Delivery Versus Cesarean Delivery: Changes in Patient Preferences Before and After Delivery**
*Kenneth I. Barron, MD*, *Erin Habecker, BA*, *Janet Hardy, PhD, MSc, MPH*, *Sharon Jackson, MPH*, *Tiffany A. Moore Simas, MD, MPH, MEd*

62 **Risk Factors for Late Preterm Birth**
*John R. Barton, MD*, *Christie L. Young, RN*, *MPH, Glyn G. Caldwell, MS, MD*, *Heather M. Bush, PhD*, *Steven Browning, PhD*

63 **Fetal Heart Rate Patterns in Term Nulliparous Patients in Active Labor**
*Timothy S. Batig, CPT, MD*, *Jason A. Pates, MAJ, MD*, *Peter E. Nielsen, COL, MD*

65 **Uterine Arteriovenous Malformation and Placenta Increta in Pregnancy After Endometrial Ablation**
*Meredith Lee Birsner, MD*, *David Bonekamp, MD, PhD*, *Kimberly L. Levinson, MD, MPH*

66 **Effects of Statewide Prenatal Screening: A Single University Experience**
*Yair Blumenfeld, MD*, *Jane Chueh, MD*, *Joanne Taylor, MSc*, *Joyce Sung, MD*, *Louanne Hudgins, MD*, *Yasser El-Sayed, MD*

67 **Diagnostic Criteria for Gestational Diabetes: The Racial Impact**
*Meaghan R. Bowling, MD*, *Cherry Neely*, *Joseph Biggio, MD*, *Victoria Chapman, MPH, BSN*

68 **Risk Factors for the Development of Chorioamnionitis in a Teaching Institution**
*Zachary S. Bowman, MD, PhD*, *Gena Clark, RNC*, *Gladys A. Ramos, MD*, *Leniel Cole, BSN*

69 **Prevalence of Chlamydia and Gonorrhea in an Obstetric Resident Patient Population**
*Electra C. Bradshaw-Graham, MD*, *José A. Prieto, MD, MPH*

71 **The Frequency and Effects of Prior Antenatal Corticosteroid Therapy on Late Preterm Birth Infants**
*Carlos A. Carreno, MD*, *George Saade, MD*, *Jerrie S. Refuerzo, MD*, *Marium Holland, MD*, *Sean C. Blackwell, MD*, *Susan Ramin, MD*

72 **Maternal Transfers to a Tertiary Care Center: Admission Diagnoses and Gestational Age**
*Suchitra Chandrasekaran, MD*, *Cynthia Shellhaas, MD, MPH*, *Philip Samuels, MD*

73 **Sucessful Delayed Interval Delivery**
*Eericca M. Clegg, DO*, *Raisa Platte, MD*

75 **Genetic and Environmental Risk Factors for Postpartum Depression**
*Patrick R. Finley, PharmD, BCPP*, *Carolyn A. Erdman, BS*, *Patricia A. Robertson, MD*, *Rebecca Abel, BA, LCSW*, *Shareen Y. El-lbiary, PharmD*, *BCPS, Steve P. Hamilton, MD, PhD*

76 **Neonatal Injury Associated With Severe Maternal Morbidity During Delivery Hospitalizations**
*Nelli Fisher, MD*, *Cynthia Chazotte, MD*, *David A. Savitz, PhD*, *Dena Goffman, MD*, *Edmund F. Funai, MD*, *Heather S. Lipkind, MD, MS*

77 **Utilization of Blood Products and Surgical Interventions in Massive Obstetric Hemorrhage**
*Karin A. Fox, MD, Ben Byers, MD, Julio Mateus, MD, Sangeeta Jain, MD, Sanmaan Basraon, MD*

78 **Maternal and Fetal Risk Factors Associated With Massive Obstetric Hemorrhage**
*Karin A. Fox, MD, Ben Byers, MD, Julio Mateus, MD, Sangeeta Jain, MD, Sanmaan Basraon, MBBS*

79 **Perioperative Outcomes of Resident-Supervised Cesarean Deliveries Versus Those Performed by Private Attendings**
*Stepanida Freeman, MD, Matthew A. Barker, MD, Vicki L. Dryfhout, MA, Donna Lambers, MD*

80 **Safety of Seprafilm® Use During Cesarean Delivery**
*Victor Gonzalez-Quintero, MD, MPH, Allison LaBoon, BS, David Ludwig, PhD, Jenny Arango-Longo, MD, Pam Uharriet, RN, MPH, Torre Halscott, MD*

81 **Risk Factors and Outcome of Umbilical Knots**
*Jesus M. Granados, BS, Aaron Caughey, MD, PhD, Amanda Yeaton-Massey, BA, Geri Ottiviano, Stephanie J. Handler, BA, Yvonne W. Cheng, MD, MPH*

82 **How Dangerous is a Nuchal Cord?**
*Jesus M. Granados, BS, Aaron Caughey, MD, PhD, Amanda Yeaton-Massey, BA, Stephanie J. Handler, BA*

83 **The Correlation Between Head Station Assessed by a Noninvasive Imaging Technology and Mode of Delivery**
*Shoshana Haberman, MD, PHD, Gonen Ohel, MD, Jacky Nizard, MD, Ron Gonen, MD, Yoav Paltieli, MD, PhD, Yves Ville, MD*

84 **Management and Outcome of Twin–Twin Trasnfusion Syndrome Complicated With Placental Insufficies**
*Mounira Habli, MD, Carrie Huber, MD, Foong Yen Lim, MD, Timothy Crombleholme, MD, William Plozin, MD*

85 **The Effect of Bariatric Surgery on Pregnancy Outcomes**
*Nancy W. Hendrix, MD, Mariangela DiLillo, Susan Weiner, MSN, Vincenzo Berghella, MD*

86 **Management of Placenta Accreta: A Survey of Maternal–Fetal Medicine Practitioners**
*Jennifer A. Jolley, MD, Deborah A. Wing, MD, Michael Nageotte, MD, Vineet K. Shrivastava, MD*

87 **Operative Morbidity Associated With Cesarean Delivery in Patients Undergoing Highly Active Antiretroviral Treatment**
*Johannes Jones, MD, Aroti, BS, Robert R. Robertazzi, MD, Sabina Cherian, MD*

89 **Pregnancy Weight Gain in the Obese Gravida: Maternal and Neonatal Outcomes**
*Saju Joy, MD, MPH, Brett Einerson, MS, Cheryl Desch, MS, RN, Josephine K. Huffman, MD, Niki Istwan, RN, Ryan A. Stone, MD*

88 **Influence of the New Weight Gain Guidelines on Pregnancy Outcomes in Obese Women**
*Saju Joy, MD, MPH, Brett Einerson, MS, Cheryl Desch, MS, RN, Josephine Huffman, MD*

90 **Epidural Anesthesia During Labor, Myths and Realities: Patient Perception and Experience**
*Angela D. Kerr, MD, Judy Fong, BS, Robert R. Robertazzi, MS, Shala Salem, MD*

91 **Pregnancy Outcome of Patients Without Criteria for Gestational Diabetes Mellitus but With Abnormal 100-gm Oral Glucose Tolerance Test Results**
*Anna S. Leung, MD, Karina Yu, Sharon Lane, RN*

92 **Do Patients With Gestational Diabetes Mellitus Return for Postpartum Screening?**
*Anna S. Fun Leung, MD, Garrett K. Yu, Laura Smith, RN*

93 **Knowledge and Use of Folic Acid in Kansas**
*Emily Linklater, BS, Niaman Nazir, MBBS, MPH, V. James Guillory, DO, MPH, FACPM, Won S. Choi, PhD*

94 **Presidential Voting Pattern and Perinatal Mortality in Wisconsin, 2004: A Pilot Study**
*Erin M. Marra, BS, Everett F. Magann, MD, Han Y. Chen, MS, John C. Morrison, MD, Nancy W. Hendrix, MD, Suneet P. Chauhan MD*

95 **Trial of Labor in the Diabetic Gravida: Success Rates and Outcomes**
*Dimitrios S. Mastrogiannis, MD, PhD, MBA, Madelyn Gonzales, MD, Neetu Jain, MPH, Vani Dandolu, MD, MPH*

96 **Effects of a Verbal Summary in Improving Maternal Recall in Postpartum Women**
*Margaret M. McElhinney, BS, Kimberly Kenton, MD, Linda Brubaker, MD*

97 **A New Interdisciplinary Model for the Identification and Treatment of Postpartum Depression**
*Samantha E. Meltzer-Brody, MD, MPH, Daniel Clarke-Pearson, MD, David Rubinow, MD, John Thorp, MD, Kate Menard, MD, MPH, Robert Strauss, MD*

98 **A Perinatal Rapid Response Team: A Preemptive Team Approach to Improved Patient Safety and Liability**
*Joseph C.L. Merola, MD, MPH, James N. Anasti, MD, Kathy Nunemacher, BSN, RN, CPN, Peter A. Robson, MD*

99 **External Cephalic Version Is More Successful in African-American Women**
*Gerri L. Ottaviano, BA, Aaron B. Caughey, MD, PhD, Clara Ward, MD, Jesus M. Granados, BA, Stephanie J. Handler, BA, Yvonne W. Cheng, MD, MPH*

100 **Does the Type of Uterine Incision at Time of Preterm Birth Affect Perinatal Outcomes?**
*Bhuvan Pathak, MD, David Miller, MD, Joseph Ouzounian, MD, Lili Shamsnia, Neisha Opper, Richard Lee, MD*

101 **Adolescent Pregnancies: Minority Racial–Ethnic Groups Have Decreased Rates of Obstetric Complications**
*Christina A. Penfield, Aaron B. Caughey, MD, PhD, Amanda Yeaton-Massey, MD, Mariam Naqvi, MD, Yvonne W. Cheng, MD, MPH*

102 **Prevention of Excessive Pregnancy Weight Gain Through Patient Education and Provider Counseling**
*Rosanne Di Pietrantonio, BA, Elizabeth Burchert, MD, Joseph Feinglass, PhD, Melissa Simon, MD, MPH*

103 **Change in Modified Bishop Score as a Predictor of Cesarean Delivery Rate after Cervical Ripening**
*Michael Plevyak, MD, Andrew Healy, MD, Brian Whitcomb, MD, Fadi Bsat, MD, Glenn Markenson, MD, Prasad Gawade, MBBS*

104 **Comparison of Bishop Score With Modified Bishop Score to Predict Cesarean Delivery After Induction**
*Michael Plevyak, MD, Andrew Healy, MD, Brian Whitcomb, MD, Fadi Bsat, MD, Glenn Markenson, MD, Prasad Gawade, MBBS*

105 **Initiation of an Obstetric Rapid-Response Team: Effects on Emergent Cesarean Deliveries**
*Orlando M. Ramirez, MD, Carol L. Gagliardi, MD, Eunji Seward, MD*

106 **Comparison of Methergine and Oxytocin for the Control of Postpartum Bleeding After Cesarean Delivery**
*Irvin J. Reiner, MD, Glena Davis, DO, V. Daniel Castracane, PhD*

107 **Attitudes of Pregnant Women Toward Spinal Muscular Atrophy Carrier Testing**
*Britton D. Rink, MD, MS, Courtney D. Lynch, PhD, MPH, Laura A. Montgomery, MS, Mona R. Prasad, MD, MPH, Thomas W. Prior, PhD*

108 **Medicaid Recipients Benefit From a Comprehensive Maternity Program: Pregnancy Outcomes**
*Charles Rittenberg, MD, MHA, Debbie Rhea, MPH, Gary Stanziano, MD, Niki Istwan, RN, Scott Sullivan, MD, MSCR*

109 **Role of Sex in Antenatal Corticosteroids to Prevent Respiratory Distress Syndrome: Meta-Analysis**
*Stephanie Roberge, MD, Emmanuel Bujold, MD, MSc, Yves Lacasse, MSc*

110 **Micro-RNAs Expression in Chorioamniotic Membranes From Patients With Preterm Labor and Preeclampsia**
*Lorna Rodriguez, MD, Amra Chaudhri, MD, Kathleen Mayor-Lynn, MD, Naser Chegini, PhD*

111 **Improving Shoulder Dystocia Documentation With Simulation Training and Delivery Note Templates**
*Stacey Leigh Rubin, MD, Ashlesha Dayal, MD, Dena Goffman, MD, Hye Heo, MD, Nelli Fisher, MD, Peter S. Bernstein, MD*

112 **Neonatal Outcomes From Multiple Nuchal Cord Entanglements**
*Alia Shbeeb, MD, Garrett Lam, MD, Laura Mercer, MD, Melissa Ingersoll, RN, BSN, CRC*

113 **Postpartum Depression Screening: The Role of Patient Demographics**
*Nicole M. Siems, MD, Ahmed Yousry, MD, Carol Gagliardi, MD, Christopher Marengo, MD*

114 **Can Blood Pressure After Delivery Predict Women at Risk for Persistent Hypertension?**
*Sindhu K. Srinivas, MD, MSCE, Andrea G. Edlow, MD, Michal A. Elovitz, MD, Sarah J. Ratcliffe, PhD*

115 **Episiotomy and Rates of Third-Degree and Fourth-Degree Laceration in a Teaching Institution**
*Jessica Stine, MD, Eric D. Schroeder, MD, Lesley de la Torre, DO, Lunthita Duthely, MS, Michael Stine, DO, Victor Hugo Gonzalez-Quintero, MD, MPH*

116 **Maternal Underweight Status and Association With Preterm Contractions**
*Teresa Tam, MD, Mihai Muresan, MD, Neal Ipema, MD*

117 **Gestational Weight Gain – How to Institute New Guidelines**
*Gina M. Tassone, BA, Janet Hardy, PhD, MSc, MPH, Robert E. Berry, Jr, MD, Tiffany A. Moore Simas, MD, MPH, MEd*

118 **Midtrimester Microbial Invasion of the Amniotic Cavity and Very Preterm Birth**
*Amelie Tetu, MSc, Emmanuel Bujold, MD, MSc, Fabien Rallu, PhD, Jean Gekas, MD, PhD, Louise Duperron, MD, Valerie Morin, MD*

119 **Utility of Baseline Liver Function Testing in Morbidly Obese Patients**
*Loralei Thornburg, MD, Amanda Victory, MD, Brittany Walker, Danielle E. Durie, MD, Eva K. Pressman, MD, Kathryn Somers*

120 **Retrospective Cohort of Teratogen Exposure as an Indication for Prenatal Diagnosis**
*Alexis Tran, DO, Lony C. Castro, MD*

121 **Maternal Obesity and the Severity of Hyperemesis Gravidarum**
*Janelle R. Walton, MD, Hugh Ehrenberg, MD*

122 **Does Preeclampsia Predict the Risk of Late Postpartum Eclampsia?**
*Diana S. Wolfe, MD, MPH, Joseph J. Apuzzio, MD, Michael G. Ross, MD, MPH, Shauna F. Williams, MD*

123 **Perineal Body Length and Lacerations: How do They Differ by Ethnicity?**
*Luchin F. Wong, MD, MPH, Aaron B. Caughey, MD, PhD, Amanda Yeaton-Massey, BS, Jesus Granados, BS, Stephanie Handler, BS, Teresa Sparks, MD*

## Office Practice

124 **Impairment in Relationship Satisfaction in Women With Hypoactive Sexual Desire Disorder**
*Lesley M. Arnold, MD, Andrew Goldstein, David Bakish, MD, David Goldmeier, Diane Lewis-D'Agostino, Glen Wunderlich PhD*

126 **Maternal Depression Screening: A Quality of Care Initiative**
*Janice I. French, CNM, MS*, *Annette Rexroad, PhD, MPH*, *Beiney, Nercissian, BS*, *Carolina Reyes, MD*, *Jennifer Ustianov, RN, BSN*, *M. Lynn Yonekura, MD*

127 **Efficacy of the Use of Flibanserin, 100 mg qhs, in Premenopausal Women With Hypoactive Sexual Desire Disorder: Sexual Satisfaction**
*Michael L. Krychman, MD*, *Diana Hoppe, MD*, *Elaine Jolly, MD*, *Michael Sands, PhD*, *Sheryl Kingsburg, PhD*

128 **Healthcare Provider Assessment of Sexual Dysfunction and the Use of Screeners**
*Michael L. Krychman, MD*, *Sheryl Kingsburg, PhD*

129 **OB CARES: The Obstetric Clinics and Resources Study**
*Christie A. Lancaster, MD*, *MSc, Erin Henshaw, PhD*, *Gina L. Fedock, MSW*, *Heather A. Flynn, PhD*, *Jane Forman, ScD, MHS*, *Matthew M. Davis, MD, MAPP*

130 **Onset of Efficacy of Flibanserin in Premenopausal Women With Hypoactive Sexual Desire Disorder**
*James A. Simon, MD*, *John M. Thorp, MD*, *Molly Katz, MD*, *Robert Pyke, MD, PhD*

131 **Operative Dictation Templates in Obstetrics and Gynecology**
*Holly K. Yettaw, MD*, *Chaim B. Colen, MD, PhD*

## Oncology

132 **Morbidity of Partial Gastrectomy in Primary Ovarian Cancer Cytoreduction**
*John P. Geisler, MD*, *Adam C. Walter, MD*, *Kelly C. Manahan, MD*

133 **Rates of Positive Margins and Subsequent Abnormal Cervical Cytology After Excisional Biopsy**
*Charles A. Leath, III, MD*, *Beverly G. Reed, MD*, *Edward Kost, MD*, *Megan Difurio, MD*, *Michael Sundborg, MD*, *William Lowery, MD*

## Primary Care

134 **Effectiveness of Treatment With Frovatriptan in Women With Long-Duration Migraine**
*Samira Harper, PharmD*, *John Campbell, BSc*, *Leslie Kelman, MD*, *Todd Berner, MD*, *Xiaojun Hu, PhD*

## Reproductive Endocrinology/Infertility

135 **Monitoring Outcomes of Pelvic Inflammatory Disorder: Trends in Tubal Factor Infertility and Ectopic Pregnancy**
*Karen W. Hoover, MD*, *PhD, Charlotte K. Kent, PhD*, *Guoya Tao, PhD*, *Robert E. Johnson, MD, MPH*

136 **Uterine Artery Embolization for Conservative Management of Advanced Interstitial Pregnancy**
*Hidenori Sasa, MD*, *Akio Watanabe, MD*, *Kenichi Furuya, MD*, *Masashi Takano, MD*, *Tatsumi Kaji, MD*

## Ultrasound

137 **Thickened Endometrial Lining in Menstruating Women: Is There an Association With Pathology?**
*Madeleine B. Courtney-Brooks, MD*, *Matthew F. Reeves, MD, MPH*

138 **First-Trimester Three-Dimensional Placental Volume and Vasculature: New Biomarkers of Early Placental Insufficiency?**
*Mona Effendi, MD*, *Emmanuel Bujold, MD, MSc*, *Katy Gouin, MD*, *Mario Girard, RT*, *Yves Giguère, MD, PhD*

139 **Does Chorionic Villus Sampling Increase the Risk of Fetal Echogenic Bowel?**
*Boris Petrikovsky, MD, PhD*, *Allan Klapper, MD*, *Daniel Roshan, MD*, *Ira Jaffe, MD*, *Shilpa Monga, MD*

140 **The Incidence of Isolated Soft Markers in a Community-Based Hospital**
*Tara Santoroski, DO*, *Andrew Gerson, MD*, *Anju Suhag, MD*, *Mohamad-Mehdi Parva, MD*, *Steven Scott, BS, RDMS*

**CONTRACEPTION / FAMILY PLANNING**

## Immediate Versus Delayed Postabortal Copper T 380A Intrauterine Device Insertion in Cases Over 12 Weeks of Gestation

*Miriam Cremer, MD, MPH*
Mount Sinai School of Medicine, New York, New York

*Kimberley Bullard; Reagan McDonald Mosley, MD, MPH; Christine Weiselberg, NP; Michael Moleai, MD*

**OBJECTIVE**: The intrauterine device (IUD) is a safe, effective, and well-tolerated form of contraception. Placing an IUD immediately after a second-trimester abortion could potentially decrease the number of subsequent unplanned pregnancies in this population.

**METHODS**: This multi-site, randomized, controlled trial in New York City has enrolled 215 subjects to immediate versus delayed placement of the copper T380A IUD after abortion from 12 weeks through 24 weeks of gestation. Primary endpoint is IUD use at 6 months after the procedure.

**RESULTS**: 215 women have been enrolled in the study. 98 subjects have reached their 6-month follow-up, and 31/98 (31.6%) have been lost to follow-up. Of the 55 randomized to immediate placement 51/55 (92.7%; 95% confidence interval [CI], 85.8–99.6%) are using an IUD at 6 months compared with 15/44 (34.1%; 95% CI, 20.1–48.1%) of the delayed placement. 32/51 (62.7%; 95% CI, 49.4–76.0%) of the delayed group did not return for their postoperative visit and received their IUD.

**CONCLUSION**: Subjects who had immediate placement were much more likely than delayed placement to be using an IUD after their procedure. A high-proportion of subjects in the delayed group never followed up for their postoperative visit. Placing the IUD immediately after the procedure significantly increases the likelihood of use of effective contraception following a second-trimester abortion. Most women currently using the IUD are satisfied or highly satisfied with the method.

**Breast Cancer Risk and Use of Levonorgestrel-Releasing Intrauterine Devices: Results from a German Case–Control Study**

*Jürgen Dinger, MD, PhD*
Berlin Center for Epidemiology & Health Research, Berlin, Germany

*Carolyn Westhoff, MD; Klaas Heinemann, MD, MBA, PhD; Anita Assmann, MSc; Kristina Bardenheuer, MSc*

**OBJECTIVE:** To investigate whether use of levonorgestrel-releasing IUDs (LNG-IUD) is associated with a higher breast cancer risk compared with the use of conventional copper IUDs.

**MATERIALS AND METHODS:** A population-based, case–control study was conducted in Finland and Germany with cases drawn from cancer registries. Women had to be 50 years old or younger with a breast cancer diagnosis between 2000 and 2007. Controls matched by age and region (in a ratio of 1:4) were obtained from randomly selected households (Germany) and the population register (Finland), respectively. Sample size calculations revealed that 3,500 cases and 14,000 controls were needed to be able to exclude a 1.5-fold risk.

**RESULTS:** Overall, 5,113 cases and 20,452 controls (1,815 cases and 7,260 controls from Germany and 3,298 cases and 13,192 controls from Finland) were analyzed. Levonorgestrel-releasing IUD users and copper IUD users had a similar risk profile for breast cancer. The following Odds Ratios (OR) for different time points were shown: crude OR and adjusted OR at first use before diagnosis was 1.04 (95% confidence interval [CI], 0.93–1.17) and 0.99 (95% CI, 0.88–1.12), respectively; first use at least 6 months before diagnosis was 1.10 (95% CI, 0.70–1.73) and 0.99 (95% CI, 0.61–1.59), respectively; and use at the time of diagnosis was 0.90 (95%CI: 0.58–1.41) and 0.85 (95% CI, 0.52–1.39), respectively.

**CONCLUSIONS:** Results suggest that ever or current use of a LNG-IUDs is not associated with a higher breast cancer risk compared with ever or current use of copper IUDs.

**Immediate Placement of Intrauterine Devices after First-Trimester and Second-Trimester Pregnancy Termination**

*Michelle C. Fox, MD, MPH*
Johns Hopkins University School of Medicine, Baltimore, Maryland

*Roxanne Jamshidi, MD, MPH; Kathyrn Severson, BA; Julia Oat-Judge, BA; Rameet Singh, MD, MPH; Anne E. Burke, MD, MPH*

**BACKGROUOND:** Since 2004, our clinic has offered immediate intrauterine device (IUD) insertion after first-trimester and second-trimester surgical abortions.

**OBJECTIVE:** To review the safety and effectiveness of placement of IUDs immediately after surgical abortion up to 20 weeks of gestation.

**METHODS:** Women presenting for elective abortion between 2004 and 2008 who desired an IUD and intended to follow-up within our medical system were included in this retrospective record review.

**RESULTS:** 262 (roughly 30% of patients) requested IUD insertion. Of these, 69% (180) desired immediate placement. 5% of planned immediate insertions were deferred because of insurance restrictions or procedure complications. Two-thirds of the immediate insertions were performed after 12 weeks of gestation. Ten (6%) underwent immediate placement in the presence of unknown gonorrhea or chlamydia infection or both. Of these, one had her IUD removed because of mild pelvic inflammatory disease (PID), and three were lost to follow-up. Only 21% planning interval placement ultimately received an IUD (versus 95% immediately, $P < .0001$). 52% did not return after IUD placement. Three in the immediate group (2%) versus zero in the interval group developed mild PID within a month of insertion ($P = .6$). Expulsion rates were 2% and 0% after immediate and interval placement, respectively ($P = .5$). Twenty-five (15%) in the immediate group versus 0 in the interval group had their IUD removed early ($P = .09$), with pain and bleeding being the most commonly cited reasons.

**CONCLUSION:** Immediate postabortion IUD insertion is feasible, safe, and effective, regardless of gestational age. Given the poor return for interval insertion, immediate placement may be preferable.

**Can the Bleeding Pattern During Consecutive Use of the Levonorgestrel-Releasing Intrauterine Device be Predicted?**

*Oskari M. Heikinheimo, MD, PhD*
University of Helsinki, Helsinki, Finland

*Kristina Gemzell-Danielsson, MD, PhD; Pirjo Inki, MD, PhD; Michael Kunz, PhD; Leo Plouffe, PhD*

**OBJECTIVES:** To analyze possible factors that may predict the bleeding pattern during consecutive use of the levonorgestrel-releasing intrauterine system.

**METHODS:** Fertile-aged women (N = 204) who had used their first levonorgestrel-releasing intrauterine system (LNG-IUS) between 4 years and 3–9 months and who opted for the insertion of a second IUS immediately after removal of the first IUS were included in the study. Bleeding data was reported descriptively, using reference periods (RPs) of 90 days starting from the last 90 days of the first IUS use (baseline) until the end of the first year of the second IUS (RPs 1–4). In addition, the bleeding data was categorized as bleeding category (BC)1—no bleeding or spotting during the RP, BC2—spotting 1–9 days and no bleeding, and BC3—spotting more than 9 days or any bleeding.

**RESULTS:** The mean number (standard deviation) of bleeding–spotting days decreased from 11.5 (10.2) during RP1 to 6.4 (8.1) during RP4. Analyses of multiple factors (age, parity, body mass index, indication of LNG-IUS use, smoking, presence of uterine fibroids, and baseline bleeding category) revealed that women with uterine fibroids or baseline BC3 had more bleeding–spotting days during RPs1-4, compared with women without fibroids or with baseline BC1–2. However, also in these two groups, bleeding–spotting was reduced during RPs1–4.

**CONCLUSIONS:** Uterine bleeding–spotting was reduced during consecutive use of the LNG-IUS. Analyses of multiple factors that may be associated with bleeding indicated that women with uterine fibroids and baseline BC3 continued to have more bleeding–spotting than women without fibroids or with baseline BC1–2.

**Improving Adherence With Oral Contraceptives Using Daily Text-Message Reminders**

*Melody Y. Hou, MD, MPH*
Boston University Medical Center, Boston, Massachusetts

*Shelley Hurwitz, PhD; Alisa B. Goldberg, MD, MPH; Erin Kavanaugh, MPH; Jennifer Fortin, MPH*

**OBJECTIVE:** Women who forget to take their oral contraceptive pills (OCPs) are at risk for unintended pregnancy. We examined whether women receiving daily text-message reminders would have increased OCP adherence compared with women not receiving reminders.

**METHODS:** This randomized, controlled trial examined the effect of daily text-message reminders on OCP adherence of new OCP users. Pill taking was tracked for three months by an electronic monitoring device (EMD) with wireless data collection. During the study period, participants assigned the intervention received daily reminder text messages.

**RESULTS:** Of the 82 women randomized, 73 had usable EMD data at the end of the study. This sample size was calculated to detect a 1.6-pill difference (standard deviation is 2 pills) at 90% power ($\alpha = 0.05$) with 20% dropout. The mean number of missed pills per cycle did not differ significantly between the groups: 4.1±2.6 for the text messaging group and 3.7±3.4 for the control group ($P = .32$). The mean number of missed pills per cycle increased over the course of the study, but this pattern did not increase differentially between the groups.

**CONCLUSION:** Women receiving daily text-message reminders had the same rate of missed pills as women who did not receive reminders. Although the lack of difference could be attributed to the frequent use of alternative reminder systems in the control group, the rate of missed pills was still very high in both groups. Daily text-message reminders may not be sufficient in improving daily OCP adherence.

**Women's Self-Efficacy in Future Contraception Use and Continuation at the Time of Abortion**

*Tushani Illangasekare*
*University of California, San Francisco, California*

*Abby Sokoloff, MPH, Jody Steinauer, MD, MAS, Rachna Vanjani, Michelle Sriwongtong, MSc, Christine Dehlendorf, MD, MAS*

**OBJECTIVE:** To investigate women's "contraceptive self-efficacy" after abortion. If women are able to accurately estimate the likelihood of future contraception adherence, contraceptive self-efficacy, at the time of choosing a method, it can be used as a tool in contraceptive counseling.

**METHODS:** In a prospective cohort study, women choosing long-term progestin contraceptives after surgical abortion were followed for 1 year. A baseline survey was administered that included self-efficacy questions regarding likelihood of continuing their chosen contraceptive.

**RESULTS:** 263 women completed the baseline survey (102 using levonorgestrel-releasing intrauterine system [LNG-IUS], 66 using implant, 95 using DMPA), and follow-up surveys are ongoing. Approximately 96%, 92%, and 95.5% of women who chose LNG-IUS, DMPA, and implant, respectively, were sure they would continue their method for 6 months. Ninety-eight percent of women were sure that at 6 months if using their method they would use it correctly, but only 87% of women were confident they would not be pregnant in 6 months.

**CONCLUSION:** Patients were generally confident about continuing their long-term contraceptive method, a finding that is higher than previous studies, which overwhelmingly report low self-efficacy with short-term methods . Women were less sure about not being pregnant in 6 months than they were about continuing their method and using it correctly. This may be due to general insecurity about contraception. If self-efficacy predicts continuation, it may be useful to incorporate self-efficacy questions into contraceptive counseling.

**Estradiol Valerate–Dienogest Oral Contraceptive for Heavy or Prolonged Menstrual Bleeding or Both: A Pooled Analysis**

*Jeffrey T. Jensen, MD*
Oregon Health & Science University, Portland, Oregon

*Susanne Parke; Uwe Mellinger; Andrea Machlitt; Ian S Fraser*

**OBJECTIVES:** To evaluate the efficacy of an oral contraceptive comprising estradiol valerate–dienogest (E2V–DNG) for the treatment of heavy or prolonged menstrual bleeding or both without organic pathology in a pooled analysis of two identically designed multicenter, double-blind, randomized, placebo-controlled studies conducted in parallel in the United States and Canada and in Europe and Australia.

**METHODS:** Women (at least 18 years old) with heavy bleeding (at least two episodes each, with a blood loss volume of at least 80 mL) or prolonged bleeding (at least two episodes each, lasting at least 8 days), confirmed during a 90-day run-in period, were randomized to E2V–DNG or placebo for 196 days. E2V–DNG was administered in a fixed combination with an estrogen step-down and progestogen step-up over 26 days of active treatment. The primary efficacy outcome was the proportion of women showing complete response (restoration of completely normal menstruation defined by eight individual criteria) during a 90-day efficacy period versus the 90-day run-in period.

**RESULTS:** Overall, 421 women were randomized 2:1 to treatment (E2V–DNG, n = 269; placebo, n = 152). Study medication was completed by 193 (71.7%) women who received E2V–DNG and 113 (74.3%) women who received placebo. For subjects with evaluable response, the proportion of complete responders for E2V–DNG was 42.0% (95% confidence interval [CI], 34.9–49.4%) and 2.7% (95% CI, 0.6–7.8%) for placebo. The mean reduction in menstrual blood loss over 90 days was significantly greater in the E2V–DNG group compared with placebo (–414±373 versus –109±300 mL for placebo; *P* <.0001 for adjusted mean difference).

**CONCLUSION:** E2V–DNG is a highly effective treatment in women with heavy or prolonged menstrual bleeding or both without organic pathology.

**Improving Hysterosalpingogram Confirmatory Test Follow-Up After Essure Hysteroscopic Sterilization**

*Maryam Guiahi, MD*
Loyola University Chicago, Maywood, Illinois

*Kara N. Goldman, MD; Margaret M. McElhinney, BS; Christopher G. Olson, MD*

**OBJECTIVE:** The purpose of this study was to determine if a change in follow-up protocol impacted the rates of follow-up compliance and confirmed tubal occlusion by hysterosalpingogram (HSG) following Essure hysteroscopic sterilization.

**METHODS:** In this International Review Board-approved, retrospective chart review, we reviewed compliance with HSG follow-up and rates of confirmed tubal occlusion in patients that underwent Essure sterilization before and after a change in our follow-up protocol. All participants underwent Essure placement between October 2003 and January 2009 by a single provider performing procedures in the office or hospital setting. The intervention consisted of a change in protocol that dedicated a staff nurse to schedule HSG appointments, call patients with appointment reminders, and track HSG compliance for patients who had Essure.

**RESULTS:** Two hundred and twenty-eight women underwent placement of Essure coils between October 2003 and January 2009. 173 women were in the preintervention group and, 55 women were in the postintervention group. More women in the postintervention group were compliant with at least one HSG following Essure placement (78.0% versus 91%, $P = .03$). Patients were 2.7 times more likely to have HSG-confirmed tubal placement and occlusion status by either one or two HSGs following a change in office protocol (71% versus 87.5%, $P = .01$).

**CONCLUSION:** Dedicating a staff nurse to track patient's HSG follow-up resulted in an improvement in HSG compliance as well as rates of confirmed tubal placement and occlusion.

**Safety and Tolerability of Medical Versus Surgical Termination of Pregnancy for Fetal Anomalies**

*Mollie T. Miller, DO*
Bayfront Medical Center, St Petersburg, Florida

**OBJECTIVE:** To compare the safety and tolerability of medical methods with surgical methods of second-trimester termination of pregnancy for fetal anomalies.

**METHODS:** This is a prospective observational study. Patients undergoing second-trimester termination of pregnancy were given a survey 6 weeks postprocedure that asked questions regarding pain, tolerability, and intrusive or avoidant thoughts or behaviors (Horowitz Impact of Events Scale) related to the termination experience. Charts were analyzed to detect any medical complications experienced.

**RESULTS:** There were nine subjects in the medical group and nine in the surgical group. Pain scores were statistically similar in each group. Patients undergoing surgical termination had less intrusive thoughts and less total stress scale scores at 6 weeks than medical termination patients. Forty-four percent of patients in the medical group had fever, which was likely caused by misoprostol use. Fourty-four percent of the study participants were Catholic, highlighting the importance of offering termination to all patients carrying a fetus with anomalies, regardless of their religious affiliation. Patients carrying fetuses with intracranial anomalies took significantly longer to deliver medically than those carrying fetuses with nonintracranial anomalies.

**CONCLUSION:** Both medical and surgical methods of termination of pregnancy in the second trimester appear to be safe and tolerable, but surgical methods may be safer and better tolerated.

**Diabetic Latinas and Reproductive Behavior: Validity of the Life-History Calendar Method**

*Laura Nezworski, MD*
University of Colorado Denver School of Medicine, Aurora, Colorado

*Jeanelle Sheeder, PhD, Stephanie Teal, MD, MPH*

**OBJECTIVES:** In diabetics, preconception glucose control is of paramount importance. Latinas have the highest US rate of diabetes. We developed a comprehensive life-history calendar (LHC) to collect exhaustive subjective data on reproductive–contraceptive behavior and diabetes progress amongst a cohort of low-income Latina diabetics. Information obtained from LHCs was compared with the medical record regarding body mass index (BMI) and diabetic control to establish the reliability of the LHC data.

**METHODS:** LHCs were created by 32 diabetic Latina women aged 19-45 years with a bilingual researcher. Weight and subjective diabetic control for each year were recorded on the LHC. Weights were converted to BMI category and compared to medical record data. Hemoglobin $A_{1c}$ or random glucose values in the medical record were rated by the investigators as good, fair, or poor and compared with the patient's assessment of her diabetic control.

**RESULTS:** The medical records of 31 subjects encompassing 168 years of BMI and 124 years of diabetes were reviewed. Agreement for BMI was excellent (normal BMI: K = 0.95; obese–morbidly obese BMI: K = 0.74). Subjects assessment of diabetic control had poor agreement with the medical record when diabetic control was good (K = 0.15). Data agreement between LHC and Hemoglobin $A_{1c}$ values during periods of poor control was much better (K = 0.53).

**CONCLUSION:** Retrospective data validity is a vexing problem for researchers of both reproductive behaviors and chronic illness. For researchers seeking to examine pregnancy planning in diabetics, LHCs may be a useful tool. External validity of measured, recalled data appears reasonably accurate.

**Knowledge and Usage of Emergency Contraception in Women Seeking Abortions**

*Gretchen A. Reinhart, MD*
Medical University of South Carolina, Charleston, South Carolina

*Sydney E. Cummings, MS; Laura M. Goetzl, MD, MPH*

**OBJECTIVE:** To identify what proportion of women seeking elective pregnancy termination are aware of over-the-counter (OTC) emergency contraceptive (EC) availability.

**METHODS:** This was a cross-sectional study of women presenting to an abortion clinic in Charleston, SC. A self-administered questionnaire collected basic demographic data and information on EC awareness.

**RESULTS:** 623 women completed the survey. 31.7% (95% confidence interval, 28.0–35.3%) of women reported unawareness of the availability of OTC EC. Risk factors for EC unawareness were black race (p = .008), lower educational attainment (*P* <.001), nonuse of contraception (*P* = .009), and increasing parity (*P* <.001). In EC-aware women, 5.3% reported use in the current pregnancy, and 21% reported past use. Reasons for nonuse included “taking a chance” (24.1%), contraception failure (20.1%), inability to get EC within 3 days (18.6%), financial factors (2.4%), ignorance of EC OTC (4.7%), pharmacy availability (0.7%), and other (2.6%). The remaining 26.7% did not identify a reason for nonuse. Women who were previously EC aware were more likely to consider future use (88% versus 82%, *P* = .046).

**CONCLUSION:** The proportion of women in Charleston, SC who remain unaware of EC remains high. Additional education efforts should focus on women with risk factors for EC-unaware status. Identified reasons for nonuse of EC may be helpful in improving usage by women seeking to prevent unintended pregnancy.

**Bleeding Patterns in Women Who Received Immediate Postabortion Levonorgestrel-Releasing Placement**

*Michelle Srwiongtong, MSc*
University of California, San Francisco, San Francisco, California

*Abby Sokoloff, MPH; Tushani Illangasekare; Rachna Vanjani; Eleanor Drey, MD, EdM; Jody Steinauer, MD, MAS*

**OBJECTIVE:** To compare bleeding patterns 1 month after surgical abortion between patients who had immediate levonorgestrel-releasing intrauterine system (LNG-IUS) insertion and patients not using hormonal contraception.

**METHODS:** In a prospective study of women choosing progestin contraceptives after abortion who were followed for 1 year, 36 women using LNG-IUS and 25 women using no contraceptive reported bleeding patterns 1 month after abortion. Wilcoxon rank-sum tests were used to compare bleeding. World Health Organization definitions of bleeding and spotting were used.

**RESULTS:** The mean number of days of bleeding in the first week after abortion was 4.1 in the LNG-IUS group and 3.3 in the no-method group ($P$ = .20). The mean number of spotting days was 1.7 in the LNG-IUS and 2.4 in the no-method group ($P$ = .14). In the 4 weeks after abortion, the mean number of bleeding days was 7.4 among LNG-IUS users and 6.8 among women using no method ($P$ = .14), while the groups averaged 7.6 and 6.8 days of spotting, respectively ($P$ = .64). One month after placement, 72% of women with a LNG-IUS in place found the bleeding pattern acceptable, and over 90% were satisfied with their method and would choose it again.

**CONCLUSION:** Bleeding patterns of patients who received LNG-IUS after abortion did not differ significantly from women using no hormonal method. However, there is a trend toward more days of bleeding and fewer days of spotting in the LNG-IUS group. Insertion of LNG-IUS at the time of abortion was acceptable to patients.

**Prevalence of Mood Symptoms in Women Who Present for a Therapeutic Abortion**

*Rachna Vanjani*
University of California, San Francisco, San Francisco, California

*Abby Sokoloff, MPH; Michelle Sriwongtong, MSc; Tushani Illangasekare; Jody Steinauer, MD, MAS*

**OBJECTIVE:** There is no evidence that abortion causes depression. However, women who have a history of depression or symptoms on presentation may be at increased risk of mood disturbance after abortions. We evaluated symptoms of depression and stress in a diverse population of women seeking an abortion.

**METHODS:** In a prospective cohort study, women choosing progestin contraceptives and a comparison group of women choosing no method were recruited from an urban, academic abortion clinic to be followed for 1 year. A baseline survey included the Patient Health Questionnaire-2, a two-question screening test for depression, and the Perceived Stress Scale-4, a screening test for life stress.

**RESULTS:** 312 women were recruited for the cohort study and completed baseline surveys. The mean age was 25 years. 18% of these women were white, 37% were black, and 30% were latina. Seventy-five percent had Medicaid coverage for their abortion. Twenty-five percent answered yes to one or both depression screening questions about symptoms in the previous 2 weeks. On average, 20% of women indicated they experienced life stressors in the month preceding their abortion.

**CONCLUSION:** In our study, many women reported recent symptoms of depression on a validated, two-question initial screening test, and many reported high stress. These data support the need for screening women in similar clinic populations. In women who screen positive, clinicians should provide more specific diagnostic tests as well as interventions and close follow-up for women who are at risk.

**Women's Awareness and Use of Folate Supplements Prior to and During Pregnancy: A Global Perspective**

*Ariane von Stenglin, MD*
Bayer Schering Pharma AG, Berlin, Germany

*Sandra Buchwald; Leo Plouffe*

**OBJECTIVE:** To investigate the awareness and use of folic acid, particularly in the setting of pregnancy and planned pregnancy, in a global population of women of childbearing potential.

**METHODS**: Women from Argentina, Brazil, Canada, France, Germany, Italy, Russia, the United Kingdom, and the United States aged 15–49 years (18–49 years in the United States) capable of becoming pregnant participated in an online survey. To achieve nationally representative samples, quotas were set regarding age, region, income, and ethnicity (United States only).

**RESULTS:** Overall, 4,515 women were included in the study. Overall, 1,826 women (40%) had at least one biological child; of these, 36% reported that their first pregnancy was unplanned. 54% of women who planned their first pregnancy stopped using contraception without first consulting their physician. Overall, 83% of women were aware of folic acid. Only 39% of women who were aware of folic acid knew about it at the time that pregnancy was first considered; however, 80% of such women went on to use folic acid in the periconceptional period. The main reason for not taking folic acid in the periconceptional period, besides a lack of awareness (50%), was a lack of advice (34%). If women were advised to take folic acid while they were pregnant or thinking of becoming pregnant 92% did so. Only 11% of women who did not receive such advice took periconceptional folic acid. Results by country will be presented.

**CONCLUSION:** Appropriate counseling regarding the benefits and timely use of folic acid is necessary in women of childbearing potential.

**EDUCATION**

## Teaching Geriatrics to Gynecology Residents: Are ACOG Learning Objectives Being Met?

*Ilana B. Addis, MD, MPH*
University of Arizona College of Medicine, Tucson, Arizona

*Kathy Schwarz, MD*

**OBJECTIVES:** To evaluate the perceived geriatric knowledge of gynecology residents and establish a baseline for improving geriatric education while training obstetric and gynecology residents.

**METHODS:** Second-year and fourth-year obstetric and gynecology residents were asked to complete an online survey assessing their perceptions of their geriatric knowledge and training. Results were summarized for all respondents. Results from second-year and fourth-year residents were also compared to evaluate differences and define variables that might affect perceived geriatric knowledge.

**RESULTS:** Of 163 total responses from all US regions, 66 were from fourth-year residents, and 74% were from academic programs. Many (78%) said they were only "somewhat knowledgeable" about geriatric healthcare issues, and 61% did not think their residency adequately addressed gerogynecology. This number increased when fourth-year residents were analyzed separately (72%), despite the fact that they felt more comfortable with all the topics surveyed. Residents felt most comfortable explaining thromboembolism and infection (80–89%) and least comfortable explaining hypothermia and entrapment neuropathies (10–23%). Only 22% felt comfortable summarizing complications of anesthesia more common in geriatric patients, and 37% felt comfortable assessing the impact of a proposed surgery on a patient's capacity for independent living.

**CONCLUSIONS:** Ob-gyn residents do not feel adequately trained in geriatric issues relating to gerogynecology. A well developed gerogynecology curriculum would likely be a beneficial addition to ob-gyn residencies.

**The 50 Most Frequently Cited Ob-Gyn Articles Over the Past 50 Years**

*Justin S. Brandt, MD*
Weill Medical College of Cornell University, New York, New York

*Stephen T. Chasen, MD*

**OBJECTIVE:** Our objective was to identify and characterize the 50 most frequently cited journal articles published in the 15 highest impact obstetrics and gynecology journals during the past 50 years.

**METHODS:** Using the 2008 edition of Journal Citation Reports: Science Edition, we selected the 15 highest impact journals in obstetrics and gynecology. We then used the Social Sciences Citation Index database to determine the 50 most frequently cited articles published in these journals since 1956. Articles were evaluated for several characteristics, including number of citations, subject matter, and study design.

**RESULTS:** The 50 most cited articles were published in four journals: American Journal of Obstetrics and Gynecology, Obstetrics & Gynecology, Fertility and Sterility, and Human Reproduction. The articles were published between 1961 and 2004 and were cited a mean number of 540 times (range 373–1,090). 27 articles were related to gynecology and 23 articles were related to obstetrics. The most common types of study designs were observational and basic science studies. There was only one randomized controlled trial (RCT). The most frequently cited article, published by Gluck et al in 1971 in the American Journal of Obstetrics and Gynecology, concerned amniocentesis and fetal lung maturity determination.

**CONCLUSION:** Citations rates are limited in their ability to assess the quality of research, though they may represent one method to quantify impact. While there has been a recent emphasis on "evidence-based" medicine, it remains to be seen whether this will result in more RCTs achieving this level of impact.

**Assessing Professionalism in Residency Applicants**

*Justin S. Brandt, MD*
Weill Medical College of Cornell University, New York, New York

*Stephen T. Chasen, MD*

**OBJECTIVE:** Our objective was to evaluate the correlation between professionalism assessment and position on rank order list in residency candidates. A secondary objective was to identify any differences in assessment based on faculty versus resident and male versus female interviewers.

**METHODS:** In addition to standard evaluation forms focusing on academic achievement, individuals interviewing residency candidates were asked to complete a seven-question survey regarding professionalism. Components of the survey included image, communication and leadership skills, altruism, respect for others, tolerance, and overall professionalism. Surveys were removed from candidate files after each interview and were not used in ranking candidates for the match. Spearman's rho was used to correlate ordinal responses from the professionalism survey and position on rank order list. Wilcoxon signed ranks test was used to compare responses of faculty versus residents and male versus female interviewers.

**RESULTS:** 89 candidates underwent four interviews. There was a significant correlation between "overall professionalism" rating and rank (rho = .38, $P$ <.001). Similar degrees of strong correlation were noted between scores for each individual component of professionalism and rank. There were no differences between assessments of "overall professionalism" for faculty versus resident and male versus female interviewers. Compared with faculty interviewers, resident interviewers assigned lower scores for "image" ($P$ <.001), and female interviewers assigned lower scores for "Image" compared to male interviewers ($P$ = .004).

**CONCLUSION:** The strong correlation between professionalism assessment and rank suggests that components of professionalism are already considered when evaluating residents. Alternatively, assessment of professionalism may be influenced by knowledge of academic achievement.

**Assessing Professionalism in Residency Applicants: Interrater Agreement**

*Justin S. Brandt, MD*
Weill Medical College of Cornell University, New York, New York

*Stephen T. Chasen, MD*

**OBJECTIVE:** Professionalism has many dimensions, and assessment during an interview may be subjective. Our objective was to evaluate interrater agreement for a survey designed to assess professionalism in residency applicants.

**METHODS:** In addition to standard evaluation forms focusing on academic achievement, faculty and residents interviewing residency candidates were asked to complete a seven-question survey regarding professionalism. Components of the survey included image, communication and leadership skills, altruism, respect for others, tolerance, and overall professionalism. Surveys were removed from candidate files after each interview and were not used in ranking candidates for the match. Kappa statistics for multiple raters were used to assess interobserver agreement.

**RESULTS:** There were 89 candidates, 44 with surveys completed by all four interviewers. Kappa statistic for "overall professionalism" was 0.43, suggesting moderate agreement. The lowest Kappa statistics of 0.38 and 0.40 were seen for assessment of "image" and "leadership skills" respectively, indicating only a fair level of agreement. The highest Kappa statistics were for "respect for others" (0.76) and "tolerance" (0.66), indicating good agreement.

**CONCLUSION:** For most components of the survey, interrater agreement was acceptable. Given the importance of professionalism in medicine, use of such a survey to augment evaluation of candidates may enhance the selection process.

**Education Strategies for Teaching Vacuum-Assisted Vaginal Delivery to Residents**

*Nelli Fisher, MD*
Albert Einstein College of Medicine/Montefiore Medical Center, Bronx, New York

*Jyothshna Bayya, MD; Setul Pardanani, MD; Ashlesha Dayal, MD; Peter S. Bernstein, MD, MPH; Dena Goffman, MD*

**OBJECTIVE:** To assess knowledge concerning vacuum-assisted vaginal deliveries among residents undergoing vacuum simulation training.

**METHODS:** Residents (N = 35) participated in vacuum-assisted delivery simulation exercises. After an individual simulation session, each resident was presented with 14 multiple-choice questions. The questions assessed knowledge about prerequisites for vacuum application, indications and contraindications for placement, ideal suction pressure, location of flexion point, maximum number of pulls, total application time, definition of low and outlet vacuum assisted deliveries, management plan after 3 pop-offs, maternal and neonatal complications. Each correct answer was assigned one point toward a final score. All residents received individualized debriefing focused on their test and simulation performance.

**RESULTS:** Vacuum-assisted delivery knowledge median score (IQR) for all residents was 7 (7–10) (maximum 14). There was no statistical difference in knowledge when stratified by level of training. Most residents demonstrated knowledge in the following areas: 30 (85.7%) knew maximum number of pulls, 29 (82.9%) knew definition of low operative delivery and contraindications to vacuum use, and 28 (80%) knew to proceed with cesarean delivery after 3 pop-offs. Some residents demonstrated knowledge in following areas: 25 (71.4%) knew definition of outlet delivery, 24 (68.6%) knew prerequisites for vacuum placement and associated maternal complications, 21 (60%) knew location of flexion point. Few residents knew indications for placement 11 (31.4%), correct suction pressure 10 (28.6%) and total application time 7 (20%).

**CONCLUSIONS:** Overall knowledge about vacuum-assisted vaginal deliveries among residents is suboptimal, regardless of training level. Vacuum simulation education provides an excellent opportunity to target teaching aimed at improving individual knowledge and performance deficiencies.

**Evaluating Patient and Healthcare Provider Response to an Online Cord Blood Patient Education Program**

*Marra S. Francis, MD*
Memorial Hermann Hospital, The Woodlands, Texas

*Melanie L. Praught, MS; Lesley Cerdan; Heather L. Brown, MS*

**OBJECTIVE:** To evaluate the responses of expecting parents and healthcare providers to an online newborn cord blood stem cell patient education program.

**METHODS:** An online patient education program, including the opportunity to speak with an educational specialist, was developed by one family cord blood bank. Access to the program was provided to expecting parents and healthcare providers at US facilities. All participants were asked to complete a survey following the program. Healthcare providers were asked to rank their knowledge of newborn stem cells on a scale from 1 (none) to 10 (expert) before and after the program.

**RESULTS:** From June 1, 2009 through September 24, 2009, 11,258 individuals reviewed the program, and 343 responded to the survey (3% response rate). Of the respondents, 97% indicated that the program increased their knowledge of newborn stem cells, whereas 3% felt neutral and less than 1% disagreed. Similarly 97% of respondents reported they were satisfied with the program, whereas 1% felt neutral and 2% were unsatisfied. According to the healthcare provider survey, the program significantly increased their knowledge level of newborn stem cell from a mean of 5.5 (2.3) before to 8.4 (1.2) after the program ($P$ <.001).

**CONCLUSION:** The majority of expecting parents and healthcare providers completing the survey were satisfied with the program and believed it increased their knowledge of newborn stem cells, indicating that the online tool is an effective method to provide patient education. Further evaluation is needed to determine how the program impacts the decision making process of expecting parents regarding their newborn's stem cells.

**Development of a Web Site for the Dissemination of Information About Laborists**

*Debra Gussman, MD, MBA*
Jersey Shore University Medical Center, Neptune, New Jersey

*Andrew Blechman, MD; Jonathan Baum, MD; William J. Mann, Jr MD, MBA*

**OBJECTIVE:** There is considerable information on the Internet about laborist (obstetric hospitalist) programs, but the information is scattered. A web site was developed to consolidate reliable information and to evaluate Internet users' interest.

**METHODS:** An unrestricted, noncommercial web site named www.Oblaborist.org was launched in November 2008. Visits, page views, and hits were tracked over 21 months. Expenses to develop and maintain the web site were calculated.

**RESULTS:** There was an average of 457 visits each month, with a range of 226–705. The average number of pages viewed each month was 1,031, with a range of 492–1,829. Hits averaged 4,347 times each month with a range of 2,387–7,768. The expense for developing and maintaining the web site was $1,112.

**CONCLUSIONS:** The development of this web site was not a complicated or expensive process. Internet users are seeking information about laborists. In an open site with no registration required, it is not possible to track whether the information seekers are health professionals or members of the general public. It is not known how long visitors spent at the site or whether they found the information they were seeking. More study will be needed to determine the usefulness of this site.

**Continous Glucose Monitoring as an Educational and Motivational Prenatal Tool**

*Cassandra E. Henderson, MD, CDE*
Montefiore North Division Medical Center amd New York Medical College, Bronx, New York

*Romany Gawargious Hana, MD; Diane Aldapea, MD; Heynelda Marcano Vasquez, RN, BSN; Kevin C. Reilly, MD*

**OBJECTIVE:** Continuous Glucose Monitoring (CGMS) to document and evaluate maternal glycemic excursions for use as a motivational and educational tool to empower glycemic self-control.

**METHODS:** CGMS was used to determine the presence of hyperglycemic and hypoglycemic excursions among 10 parturients. Iindications included poorly controlled Type 1 or Type 2 diabetic candidates for insulin pump therapy and women who refused or were unable to tolerate the oral glucose screening.

**RESULTS:** Four gravidas who were at risk for glucose intolerance (obesity or prior gestational diabetes mellitus) were not able to tolerate oral glucose screening. CGMS was used to document hyperglycemiadespite Hemoglobin $A_{1C}$ values less than 6% and FBS less than 90 mg/dL. Three of these unscreened gravidas had postprandial hyperglycemia, with excursions to 200 mg/dL. The CGMS graph motivated acceptance of glucose screening. CGMS was used as an educational tool to provide six women with pregestational diabetes mellitus with visual evidence that they had wide glycemic excursions, in spite of a Hemoglobin $A_{1C}$ level less than 7% and a mean glucose by self-monitoring blood glucose (SMBG) of less than 100 mg/dL.

**CONCLUSION:** Prenatal diabetic protocol includes SMBG, with glucose meter assessment of interstitial glucose from fingerstick blood samples obtained at varying time intervals. However, even seven times per day SMBG provides only limited postprandial and nocturnal glycemic data. To evaluate maternal glycemic excursions, CGMS may be a useful visual educational tool for women at risk for or who have glucose intolerance in pregnancy.

**Perinatal Depression Content in Electronic and Print Textbooks From Relevant Medical Specialties**

*J. Jo Kim, PhD*
NorthShore University HealthSystem and University of Chicago Pritzker School of Medicine, Evanston, Illinois

*Craig Garfield, MD; Kristin Suhr, BS; Ramune K. Kubilius, MALS; Richard K. Silver, MD*

**OBJECTIVE:** To rate the adequacy of information on perinatal mood disorders in textbooks from relevant medical specialties.

**METHODS:** A 2008 survey of 34 influential textbooks from medical specialties engaged in the identification and treatment of perinatal mood disorders (obstetrics and gynecology, pediatrics, family medicine, internal medicine and psychiatry) was conducted to rate the presence and sufficiency of content in 23 perinatal mental health domains. Chapters and index listings likely to be relevant to perinatal mood disorders were identified, read, and compared by textbook specialty and mental health domain. Content for each of the 23 domains in each text was rated as absent, minimal (mere mention), or helpful (clinically useful).

**RESULTS:** Taking the selected textbooks in aggregate, helpful information was provided in only 16.5% of the expected content domains; in 71.6% expected content was absent. The highest percentages of absent content were identified in textbooks from pediatrics (91.8%) and internal medicine (89.9%). The highest percentages of helpful content were in textbooks from obstetrics and gynecology (47.8%) and psychiatry (27.2%). Topics describing symptoms and prevalence of areas relevant to perinatal mood disorder treatment, such as crisis intervention, psychotherapy, and complementary and alternative medical treatments.

**CONCLUSIONS:** Commonly used textbooks relevant to the care of perinatal mood disorders generally offered limited, but helpful, information for physicians attempting to identify and treat these important conditions affecting women and their families. Our findings highlight this as a priority area for supplemental medical education.

**Exploring Factors Influencing Patient Request for Epidural Analgesia in a Latino Population**

*Francisco J. Orejuela, MD*
University of Texas Health Science Center at Houston, Houston, Texas

*Tiffany Garcia, MSII; Charles Green, PhD; Sara Guzman, MD; Charlie Kilpatrick, MD; Sean Blackwell, MD*

**PURPOSE:** Ethnic disparities in labor pain management exist. Our purpose is to identify patients' attitudes and beliefs about epidural analgesia in order to develop a culturally competent educational intervention.

**MATERIALS AND METHODS:** A prospective observational study was conducted in patients admitted for vaginal delivery between the dates of July 1, 2009 and July 31, 2009. Inclusion criteria were singleton, term, cephalic, normal fetal heart tracing, and no contraindications for epidural. Patients were surveyed regarding their wishes for analgesia and their reasons for declining epidural. The obstetrician performed pain management counseling as is usually done. Patients were asked again about their choice for analgesia. Likert scale questionnaires were used. Wilcoxon signed ranked test was used for categorical variables. Logistic regression was performed to look for predictors of epidural request.

**RESULTS:** Fifty patients were interviewed. The average age was (27.9 +/- 6.7), average gestational age was (39.3 +/- 1.3), and the median parity was 2 (range 0–6). 72% declined epidural on admission, and 61% declined after counseling ($P$ = .14). Most common reasons for declined epidural were "women should cope with labor pain" (57%), "fear of back pain" (52%), and "family or friends advise against epidural" (36%). Acculturation was assessed by years living in the US (10 +/- 6.3), preferred language (Spanish 80%) and ethnic self-identification (Hispanic 98%). 38% were high school graduates. In multivariate logistic regression, graduation from high school was the only variable associated to request for epidural in labor (odds ratio, 4.94; 95% confidence interval 1.6–15.1).

**CONCLUSION:** Knowledge of patients' fears, expectations, and degree of acculturation is essential to developing adequate counseling interventions.

**Resident Education and Training in Female Sexuality: Results of a National Survey**

*Apurva B.Pancholy, MD*
Good Samaritan Hospital, Cincinnati, Ohio

*Catrina C. Crisp, MD; Angie Fellner, PhD; Linda Goldenhar, PhD; Steven D. Kleeman, MD; Rachel N. Pauls, MD*

**OBJECTIVE:** To assess understanding and confidence amongst third-year and fourth-year ob-gyn residents, with respect to female sexual function–dysfunction (FSD).

**METHODS:** An internet-based survey was constructed to query third-year and fourth-year residents in ACGME-approved ob-gyn programs. Residents were asked about familiarity, knowledge, and confidence in treating various aspects of FSD, based on the CREOG Educational Objectives for ob-gyn training. They were also queried regarding areas of improvement for their education.

**RESULTS:** 234 residents responded. Most residents (91.5%) reported attending five or less didactic activities on FSD. Only 19.6% reported often or always screening women for sexual function problems. Most had very little or no knowledge in administering or interpreting screening questionnaires. While many (82.8%) felt confident about obtaining a complete sexual history, only 54.7% felt able to perform a targeted physical exam. Although most residents had cared for women with dyspareunia (55.1%), a minority had managed many women with low desire (18.4%), arousal problems (8.1%), anorgasmia (5.6%), or vaginismus (16.7%). In treating patients, 34–56% reported rarely or never suggesting ancillary therapy, such as counseling and medications. However, most believed their confidence would increase through FSD lectures (97.9 %), FSD patient observations (97.4 %), rotating with a urogynecologist (94.4 %), and online modules (90.6%).

**CONCLUSION:** Despite the CREOG requirements for ob-gyn training in female sexuality, most residents feel ill equipped to address these problems. Additional educational and didactic activities would enhance residents' knowledge and confidence in treating these common, quality of life issues.

**A Pilot Study of Video Game Usage and Laparoscopic Skills**

*Justin K. To, MD*
Montefiore Medical Center / Albert Einstein College of Medicine, Bronx, New York

*Mark Levie, MD; Scott Chudnoff, MD*

**BACKGROUND:** Several small studies have shown correlations between laparoscopic aptitude and historical video game usage. No prior studies have adequately examined the association between active video gaming and laparoscopic surgical skills adoption.

**OBJECTIVES:** To determine if active video game usage impacts laparoscopic surgical skills.

**DESIGN:** This was a randomized, single-blinded, placebo-controlled trial. After completing a demographic survey, participants were videotaped while performing laparoscopic training exercises. Laparoscopic experts, blinded to the participants, viewed the videos and graded performances using a standardized assessment tool. Participants were randomized to play either crossword puzzles or video games on Sony Portable Playstations (PSP™). Both groups were asked to maintain diaries of playtime and performance. Participants were retested after 2 weeks.

**RESULTS:** 19 participants were randomized. Greater reductions in exercise times were noted in the PSP™ arm (30.2% ± 0.2) versus placebo (21.5% ± 0.2), $P = .4$. A greater reduction in errors was also seen in the PSP™ arm (33.6% ± 0.33 ) versus placebo (5.6% ± 0.6), $P = .2$ . Within the PSP™ group, greater laparoscopic performance improvements correlated with more video game playing time ($P = .05$).

**CONCLUSION:** Although differences in improvement between the two groups were not statistically significant, the trend data suggests that active video game use may improve laparoscopic skills. If these findings prove consistent in a future, larger study, then playing video games may be a feasible training adjunct for novice laparoscopic surgeons.

**ETHICS/PROFESSIONAL LIABILITY/RISK MANAGEMENT**

## Implementation of Competency-Based Recredentialing at a Large Urban Teaching Hospital

*Adam P. Buckley, MD*
Beth Israel Medical Center, New York, New York

*Zoe Rodriguez, MD; Arnold Friedman, MD*

**PURPOSE:** The Joint Commission (JCAHO) has mandated that hospitals move away from a "no news is good news" approach to the process of credentialing. In the spring of 2009, The Department of Obstetrics & Gynecology at the Beth Israel Medical Center of New York, NY, decided to research, evaluate, and implement a competency based approach to the process of recredentialing our physicians and midwives.

**METHODS:** We performed an internal review of recredentialing practices at our institution. Failing to find a suitable internal model, we searched externally for "best practice" in the literature and actively engaged leadership from organizations currently taking a competency-based approach to their credentialing process. We then assessed our hospitals quality and safety data and internal reporting mechanisms. Objective and reliable metrics were sought and given priority. Subjective and intermittently reported metrics, such as occurrence reports and patient and staff complaints, were de-emphasized. At our institution, these metrics are highly susceptible to selection and measurement biases.

**RESULTS:** Relying heavily on objective, reliable data sources and making every effort to minimize the impact of metrics that are provided on an intermittent basis, are subjective and susceptible to bias, we designed and implemented a competency-based approach to the recredentialing of our providers.

**CONCLUSIONS:** Competency-based credentialing is possible, but requires reliable, unbiased data and a commitment to minimize the risk of relying too heavily on data that is subjective and subject to bias.

**Does Requiring Shoulder Dystocia Training for Hospital Credentialing Improve Outcomes?**

*Ronald T. Burkman, Jr, MD*
Baystate Medical Center, Springfield, Massachusetts

*Alexander Knee, MS; Susan DeJoy, CNM; Carrie Bell, MD*

**OBJECTIVE:** To determine if requiring shoulder dystocia training as part of the hospital credentialing process improves the management and outcomes.

**METHODS:** A CD-ROM was developed covering the epidemiology, management, and documentation. Viewing the CD-ROM and passing a posttest were required for hospital credentialing in obstetrics starting in 2004. 32,962 deliveries were divided into three groups: pretraining (May 1, 2001 through December 31, 2003), initial round of required training (January 1, 2004 through December 31, 2005), and post initial training (January 1, 2006 through December 31, 2008). Data on cases of shoulder dystocia were collected for each time period. Our risk management database was reviewed for observations, claims, and suits related to this complication.

**RESULTS:** There were a total of 703 cases of shoulder dystocia identified; 44 (6.3%) resulted in infant injury. Across the three time periods, the rate of shoulder dystocia was 2.9%, 2.2%, and 1.6 % (*P* =-.001). Severe dystocia was documented in 3.4–3.9% of cases (*P* = .4). Among the maneuvers used, McRobert's was used in 93.2–95.% of cases and suprapubic pressure in 59–67% of cases. The use of the Wood's maneuver and posterior arm delivery declined substantially during the three time periods (*P* = .008 and *P* = .04 respectively), as did the rate of any neonatal injury (4.5% posttraining). Overall documentation also improved. Although there were five risk management cases during the first two time periods, there were none in the third.

**CONCLUSION:** The data suggest that repetitively covering key issues related to shoulder dystocia will have a positive impact on a variety of outcomes even if simulation is not used.

**Influences of Operative Vaginal Delivery Safety Initiatives in Teaching and Nonteaching Hospitals**

*Michael L. Nix, MD*
UTMB - Austin, Austin, Texas

*Elbert Whorton, PhD; Judy Kitchens, MHA; Frank Mazza, MD*

**OBJECTIVE:** To compare the influence of standardizing the operative vaginal delivery (OVD) process on the frequencies of OVD, cesarean deliver (CD), spontaneous vaginal delivery (SVD), and birth trauma (BT) between teaching and nonteaching hospitals.

**METHODS:** We looked at the proportion of OVD, CD, SVD, and BT surrounding the initiation of an OVD bundle in both teaching and nonteaching hospitals. All deliveries from 2001 to 2008 were included in the analysis (N = 81,241.) Three time periods were defined: pretransition, transition, and posttransition.

**RESULTS:** Birth trauma decreased similarly in both hospital groups and approached zero. There was a significantly increased frequency of CD over time (21.6%, 24.1%, and 27.6%.) The CD increase from pretransition to posttransition was similar in both teaching (18.9–24.1%) and nonteaching hospitals (24.2–31.1%.) SVD declined significantly with each time period (71.4%, 70.7%, and 68.1%.) The decrease in proportions of SVD from pretransition to posttransition was similar for both teaching (75.8–71.9%) and nonteaching hospitals (67–64.4 %.). Proportions of OVD decreased throughout the time periods (7%, 5.1%, and 4.3%.) The percentage of OVD in the nonteaching hospital was significantly higher during the pretransition period (8.7%) as compared with the teaching hospitals (5.3%.) No significant difference in OVD was found at the posttransition period (4.5%, 4%.)

**CONCLUSION:** Standardizing the operative vaginal delivery process resulted in lowering frequency of BT, decreased OVD, and increased CD. The decrease in operative vaginal deliveries was more apparent in nonteaching hospitals and converged to a frequency that was indistinguishable from that of the teaching hospital.

**QUIIM: Quality Through Reflection/Identification/Implementation/Measurement**

*Sharon O'Leary, MD*
St. Joseph Mercy Hospital, Ypsilanti, Michigan

*Ruth Churley Strom, RN; Laura Bozeman, BSN, RN; Robert Stager, MD*

**OBJECTIVE:** To test the Obstetric Quality through Reflection, Identification, Action, and Evaluation (ObQuRIAE) model in a 30-bed LDR unit.

**METHODS:** The ObQuRIAE model is an iterative process that uses qualitative and quantitative methods to provide a model for quality improvement in Labor and Delivery. The quality improvement process began with collective unit reflection, incorporating assessment of the safety climate through the Safety Attitudes Questionnaire, analysis of claims data with risk management, and diagnosis of team function with in situ simulation. A multidisciplinary group was formulated to identify and create a strategy to improve patient safety. Smaller multidiscplinary teams were charged to examine and devise action plans using available quality improvement tools to address process issues. Process and outcomes are evaluated and provide information to initiate the cycle again.

**RESULTS:** Postpartum hemorrhage was identified as the quality focus. Multidisciplinary teams were charged to address systems and process issues uncovered during the reflection phase: develop a more efficient and reliable blood transport mechanism, standardize language for labor and delivery communication with anesthesiology, reduce chaos in crises situations, and provide uniform education about hemodynamic status. Quality tools, such as lean six sigma process mapping, in situ simulation, and team training exercises, resulted in a new bleeding obstetric patient protocol, reducing mean time to receipt of blood from 17 minutes to 5 minutes; uniform communication with anesthesia using a PUL acronym (problem, urgency, location); and defined team roles in crisis situations.

**CONCLUSION:** We successfully applied the proposed ObQuRIAE model leading to substantive process improvement in labor and delivery.

**GYNECOLOGY**

## Highly Specific Biomarker for Stratification of Patients With Equivocal Cytology and Human Papillomavirus Positivity

*Colyn Cain, PhD*
NeoDiagnositx, Inc., Rockville, Maryland

*Elizabeth Light; Kerri Licari; Greg Endress, MS; Madhvi Upender, PhD*

**OBJECTIVE:** To establish the utility of Cervical DNA Dtex for differentiating ASCUS/HPV+ or LSIL patients with increased risk for progression and to refine clinical management of women referred to colposcopy with less than CIN2 lesions.

**METHODS:** 1,278 subjects were enrolled in this study after presenting with abnormal Pap test results and managed per ACOG Consensus Guidelines. Each subject was tested by liquid-based cytology, HR-HPV infection, and Cervical DNA Dtex to determine chromosome 3q26 copy number using fluorescence in situ hybridization. Histology diagnosis was performed on all biopsy specimens.

**RESULTS:** For each patient, cytology diagnoses, HR-HPV status, and positive Cervical DNA DTex (3q26+) results are displayed below. In HPV+ specimens, 8% revealed 3q26 copy number abnormalities. 383 subjects were referred to colposcopic biopsy.

**CONCLUSION:** An estimated 68% of ASCUS and 47% of LSIL patients regress in 2 years, and 40% of CIN2 lesions spontaneously regress, yet majority undergo colposcopy and biopsy. Cervical DNA Dtex can be used by clinicians to determine targeted management strategies for these women. DNA Dtex is positive in 10% of patients with abnormal cytology/HPV+ with less than CIN2 lesions, correlating with reported 10–15% ASCUS/LSIL/HPV+ patients that will develop CIN3. DNA Dtex has test performance of 57% sensitivity and 100% specificity with a PPV of 100% and NPV of 86.7%, using histological confirmation of CIN3/CIN3+ versus negative. # specimens HPV+ (%) 3q26+(%) NILM 743 15 1 ASCUS/ ASC-H 241 54 2 LSIL 241 79 7 HSIL 53 98 36 Table 2: WNL 78 56 0 CIN1 231 72 9 CIN2 54 89 9 CIN3 20 75 40 CIS 6 83 100

**Incomplete Abortion Management in a Resource-Poor Setting**

*Stephen N. Onwere, Dr, MBChB, MMed (O&G)*
*Abia State University Teaching Hospital, Aba, Abia*, Nigeria

*Bright Chigbu, Dr, MBBS, FWACS, Chuks I. Kamanu, Dr, MBBCh, FWACS, Adaugo C. Onwere, Dr, MBBS, Eziaha Chigbu, MS HND*

**OBJECTIVES:** This study was conducted to ascertain whether the quality of incomplete abortion management has improved with the training on and the use of MVA sponsored by Ipas, Carrboro, USA since 2004.

**METHODS:** Demographic and clinical data of 680 women treated with sharp curettage for incomplete abortion of 12 weeks gestational age or less in 2003 were collected. Data were similarly collected of 1,420 women treated with MVA for incomplete abortion over a 2-year period (2005 and 2006)

**RESULTS:** MVA was found to be safer than sharp curettage in treating incomplete abortion of 12 weeks of gestation or less. Duration of the procedure was shorter, and overall cost was less in the MVA group than in the sharp curettage group. Length of hospital stay was shorter in the MVA group. There were fewer cases of incomplete uterine evacuation with MVA compared with sharp curettage (odds ratio, 4.18; 95% confidende interval, 1.31–14.06; $P < .05$)

**CONCLUSION:** These data affirm the increased safety of MVA as well as its comparable effectiveness and lower cost in cases of incomplete abortion compared with sharp curettage in a low resource setting.

**Routine Cervical Human Papillomavirus Genotyping Predicts HSIL/CIS: A Review of 545 Cases**

*John Compagno, MD*
West Coast Pathology Laboratories, Hercules, California

Routine human papillomavirus (HPV) genotyping performed on liquid based cervicovaginal cytology samples using PCR was performed between 2004 and 2009. Of 545 cases of cervical HSIL/CIS, 75% were associated with five HPV genotypes, four of which are not found in the current US Food and Drug Administration approved vaccine. However, low-grade dysplasia, by contrast, was associated with the same five HPV viruses only 23% of the time. Consequently, specificity and predictability of identifying patients with CIS was substantially improved by routine HPV genotyping. In addition, accuracy and predictive value of corresponding Pap tests were improved by knowledge of the presence of specific HPV genotypes. We believe that baseline HPV testing in all sexually active women assists predicting those who require more aggressive observation and management compared with those who are unlikely to develop HSIL/CIS and who would require less aggressive observation.

**Intrauterine Procedures in Women Who Have Undergone Adiana Permanent Contraception**

*Seth J. Herbst, MD*
Institute for Women's Health, Wellington, Florida

*Thierry Vancaillie, MD; Ted L. Anderson, MD, PhD*

**OBJECTIVE:** To assess whether Adiana Permanent Contraception is compatible with subsequent intrauterine diagnostic and therapeutic procedures.

**METHODS:** Data were collected during the Adiana clinical (EASE) trial, in which women aged 18–45 years underwent hysteroscopic sterilization using the Adiana procedure. In this trial, placement was attempted in 645 patients, with successful bilateral placement in 570 women. All subsequent surgical procedures were recorded. The database was queried for gynecologic intrauterine procedures that occurred within the first 36 months of follow-up.

**RESULTS:** Of the 570 subjects, 28 intrauterine procedures were performed (Table 1), including one patient who underwent two procedures. Most procedures occurred after Year 1. All procedures were performed using routine techniques. There were no immediate or delayed adverse events with at least 18 months follow-up.

Table 1 - Procedures following Adiana Permanent Contraception in 570 subjects.

| | Year 1<br>Post Adiana | Years 2–3<br>Post Adiana | Total |
|---|---|---|---|
| Hysteroscopy | 2 | 3 | 5 |
| Endometrial biopsy | 0 | 1 | 1 |
| D&C | 1 | 3 | 4 |
| IUD insertion | 0 | 3 | 3 |
| Endometrial ablation | 2 | 11 | 13 |
| IVF procedure | 0 | 2 | 2 |
| Total | 5 | 23 | 28 |

**CONCLUSION:** Adiana Permanent Contraception appears compatible with several common diagnostic and therapeutic intrauterine procedures, including hysteroscopy, endometrial biopsy, D&C, endometrial ablation, IUD insertion, and IVF.

**Effect of Baseline Menstrual Blood Loss or Body Mass Index on Menorrhagia Treated With a Novel Tranexamic Acid**

*Ken N. Muse, MD*
University of Kentucky Medical Center, Lexington, Kentucky

*Arkady Rubin, PhD; Bryan Hecht, MD; David F. Archer, MD*

**OBJECTIVE:** To evaluate the influence of baseline menstrual blood loss (MBL) and body mass index (BMI) on menstrual blood loss (MBL) reduction observed during treatment with a novel, investigational, oral tranexamic acid formulation (TA, Lysteda) in women with heavy menstrual bleeding (HMB).

**METHODS:** Posthoc subgroup analysis was conducted on data from a randomized, double-blind, placebo-controlled, parallel-group study of 187 women, aged 18–49 years, with HMB (mean MBL of 80 mL per cycle or greater, averaged over two cycles). Women received TA, 3.9 g/day, (n = 115) or placebo (n = 72) for up to 5 days per menstrual period for 6 cycles. Menstrual blood loss was measured using an alkaline hematin method during the two pretreatment cycles and on-treatment cycles 1, 2, 3, and 6. Mean percentage change from baseline in MBL was stratified by baseline MBL and BMI.

**RESULTS:**

| | Baseline MBL, mL/cycle | | | | | |
|---|---|---|---|---|---|---|
| | < 100 | 100–149 | 150–199 | 200–249 | 250–299 | ≥ 300 |
| TA 3.9 g/day | | | | | | |
| Cycles, n | 61 | 157 | 107 | 46 | 24 | 31 |
| Baseline mean MBL, mL | 88.4 | 122.7 | 168.8 | 224.4 | 284.0 | 413.7 |
| MBL change, % (SD)[a] | –24.4 (41.3)[b] | –36.1 (27.0)[b] | –33.2 (28.4)[b] | –47.6 (26.5)[b] | –44.4 (21.6)[b] | –51.5 (15.7)[b] |
| Placebo | | | | | | |
| Cycles, n | 49 | 105 | 49 | 32 | 8 | 11 |
| Baseline mean MBL, mL | 90.8 | 123.7 | 163.6 | 221.7 | 274.0 | 362.7 |
| MBL change, % (SD)[a] | –8.1 (32.0) | –1.6 (36.7) | –15.5 (22.7) | –9.9 (21.3) | –11.5 (35.8) | –8.1 (20.8) |

| | Baseline BMI, kg/m$^2$ | | |
|---|---|---|---|
| | < 25 | 25–29 | ≥ 30 |
| TA 3.9 g/day | | | |
| Cycles, n | 128 | 135 | 163 |
| Baseline mean MBL, mL | 170.9 | 167.5 | 173.0 |
| MBL change, % (SD)[a] | –41.4 (28.6)[b] | –34.4 (30.0)[b] | –34.4 (30.1)[b] |
| Placebo | | | |
| Cycles, n | 58 | 80 | 116 |
| Baseline mean MBL, mL | 131.8 | 155.9 | 160.4 |
| MBL change, % (SD)[a] | –12.9 (26.0) | –4.6 (28.4) | –6.1 (35.4) |

BMI = body mass index; MBL = menstrual blood loss; SD = standard deviation; TA = tranexamic acid.

[a]Mean percentage change in menstrual blood loss from baseline.

[b]Statistically significant vs. placebo (*t* test, 2-sided; $P < .05$).

**CONCLUSION:** Treatment with TA was uniformly effective in treating HMB, irrespective of baseline MBL or BMI in this clinical trial.

**Laparoscopic Treatment of Endometriosis Using the 5-mm daVinci System**

*Ceana H. Nezhat, MD*
Atlanta Center for Special Minimally Invasive Surgery & Reproductive Medicine, Atlanta, Georgia

*Kimberly Kho, MD; Susan Kearney, MHSE*

**OBJECTIVES:** To report our experience using the 5-mm daVinci system in a series of patients undergoing laparoscopic treatment of endometriosis.

**METHODS:** Retrospective chart review was performed on all patients who underwent robot-assisted laparoscopic treatment of endometriosis in 2008. Twenty-one cases used lateral and suprapubic 5-mm daVinci system with a 12-mm umbilical port. A 5-mm grasper, sharp scissors, and electrosurgical hook were used.

**RESULTS:** The mean age was 36.4 years (range, 21–56 years), median gravidity 4 (range, 0–4), median parity 0 (range, 0–3). Nine patients had stage I endo, six had stage II, two had stage III, and four had stage IV. Indications for surgery included pain, abnormal uterine bleeding, pelvic mass, and myoma. Concomitant procedures included adhesiolysis, appendectomy, cystectomy, and myomectomy. All robotic procedures were completed successfully with no conversion to laparotomy. There were no intraoperative or postoperative complications. Estimated blood loss was less than 30 cc on average (range less than 10–75 cc).

**CONCLUSION:** 5-mm daVinci ports and instruments can be used effectively in the laparoscopic treatment of endometriosis. The smaller port size provides the benefit of smaller incisions, along with reduced risk of incisional pain and hernias. The smaller instrumentation may be advantageous in the treatment of endometriosis where detailed dissection and manipulation is required.

**Adiana Permanent Contraception in Office is Functional Equivalent to its Operating Room Performance**

*James B. Presthus, MD*
Minnesota Gynecology and Surgery, Edina, Minnesota

*Thierry G. Vancaillie, MD; Peter K. Heinlein, MD; Thomas M. Price, MD; Joseph D. Zimmerman, MD*

**OBJECTIVE:** To evaluate whether Adiana Permanent Contraception is functionally different when used in the office versus in a hospital operating room setting.

**METHODS:** All data were collected during the Adiana clinical (EASE) trial, which evaluated women aged 18–45 years who underwent the Adiana procedure either in the office (OFFICE [n = 220]) or in a hospital or surgical center (OR [n = 505]). Procedure duration, percentage of procedure attempts, percentage of bilateral placements, device reliance, pain, and recovery and return-to-work times were recorded.

**RESULTS:** Procedure duration was slightly longer for the OFFICE group (12.8 minutes versus 11.2 minutes; *P* = .02). Neither the percentage of procedure attempts (OFFICE: 87.3% versus OR: 85.5%; *P* = .56) nor the percentage of bilateral placements (OFFICE: 93.2% versus OR: 93.1%; *P* = 1.00) displayed significant differences. Device reliance was not significantly different at 3 months (OFFICE: 89% versus OR: 91%; *P* = .09) nor at 6 months (91.2% versus 94.4%; *P* = .49). For pain, the only significant difference was the lower value during matrix placement for the OFFICE group (3.8 +/- 11.7 versus OR: 8.8 +/- 18.1; *P* <.001). The OFFICE group also displayed significantly shorter recovery time (0.8 +/- 1.2 hr versus OR: 1.2 +/- 1.3 hr; *P* = .02) and return-to-work time (0–2 days [median, 0]) absent versus OR: 0–7 days (median, 1) absent; *P* <.001).

**CONCLUSION:** Adiana in-office performance is functionally the same as in the operating room. The only statistically significant between-group differences observed were lower pain scores and faster recovery times for the in-office group, albeit with a slightly longer procedure duration, relative to the OR group.

**Rapid Quantitation of Menstrual Blood Loss From Feminine Hygiene Products**

*Gene Ray, PhD*
AAIPharma, Shawnee, Kansas

*Pamela Burnett, BS; Ying Li, PhD; Dari Dadgar, PhD; Bruce Lee, MD; Russ DeLonzor*

**OBJECTIVES:** Clinical trials involving uterine-sparing procedures for treatment of fibroid symptoms or drug therapies to reduce heavy menstruation require menstrual blood loss (MBL) assessment as an end point. The two reported approaches are visual assessment (pictogram scoring) and quantitative assessment via hemoglobin conversion to alkaline hematin. Pictogram assessments are typically unreliable with low correlation coefficients. The measurement of MBL by alkaline hematin has become the method of choice and the US Food and Drug Administration (FDA) "gold standard" for MBL assessment.

**METHODS:** Alkaline hematin quantitation involves pummeling used products in sodium hydroxide and measuring the resulting hematin absorbance against a calibration curve prepared from the subjects' venous blood. To provide rapid MBL assessment, a 96-well format design was validated in accordance with FDA guidances. The validation evaluated method and product specificity, kinetic conversion, calibration design, best-fit analysis, precision and accuracy, dilution integrity, and stability.

**RESULTS:** The method was validated to accommodate daily analysis for a wide variety and number of products. A four-parameter regression equation was found to best fit the data. Interassay precision (% CV) and accuracy (% bias) of blood recovered from products were both less than 15% above the LLOQ and less than 20% at the LLOQ. Stability of blood on tampons, pads, and pantiliners was documented up to 8 weeks at room temperature, and extracts were stable for up to 33 hours.

**CONCLUSIONS:** The rapid alkaline hematin method has met or exceeded FDA validation requirements and has been used for the analysis of over 84,000 products.

**High Prevalence of Chronic Pelvic Pain in Female Veteran Population**

*Tatiana V. D. Sanses, MD*
University of Maryland Medical Center, Baltimore, Maryland

*Meghan Lynch, MD; Mari Wepprecht, MPP, ABD, PhD; Rebecca Gonzales, NP*

**OBJECTIVE:** To evaluate the prevalence of chronic pelvic pain (CPP) and to explore the differences in demographic, medical, psychosocial, and military status in women with and without pelvic pain in the female population of Veteran Affairs Maryland Health Care System (VAMHCS).

**METHODS:** This cross-sectional study reviewed VAMHCS records of all women seeking gynecologic care between July 1, 2007 and December 31, 2007. Pregnant women were excluded. Chronic pelvic pain was defined as cyclic and noncyclic and occurring for at least 6 months, causing functional disability and requiring medical care. The differences in demographics, gynecologic disorders, mental health, medical comorbidities, and military service between women with and without pelvic pain were assessed.

**RESULTS:** Out of 206 women reviewed, 72 (35%) had CPP, with 24 (11.7%) cyclic and 48 (23.3%) noncyclic CPP. Women with CPP more likely had hysterectomy (30.4% versus 15.7%, *P* = .01), menorrhagia and menometrorrhagia (40.8% versus 20%, *P* <.01) and (28.2% versus 14.8%, *P* = .03), respectively, and were current smokers [43.7% versus 27.4%, *P* = .04] when compared with women without pelvic pain. There was no significant difference in frequency of depression, alcohol use, posttraumatic stress disorder, and history of sexual–physical assault. Women with CPP were more likely to have anxiety (22.5% versus 11.2%, *P* = .04). The mean length and the type of military service (Army, Navy, Air Force, or Marines) did not significantly differ between the groups.

**CONCLUSION:** Few studies on female veteran population are published. However, the high prevalence of chronic pelvic pain (35%) with noncyclic pelvic pain (23.3%) in this population warrants further studies to better serve the needs of female veterans.

**Bowel Involvement and Stage of Endometriosis**

*Arathi Veeraswamy, MD*
Stanford University Medical Center, Palo Alto, California

*Camran Nezhat, MD, FACS; Babak Hajhoseini, MD; Sumathi Kotikela, MD; Michael Lewis, MD; Asefjah Hossein, MD*

**OBJECTIVE:** To observe the incidence of bowel involvement and stage of endometriosis.

**DESIGN:** Retrospective data analysis. The setting was the Center for Minimally Invasive & Robotic Surgery, Stanford University Medical Center, PaloAlto.California. 193 Patients with bowel endometriosis during laparoscopy and confirmed on histopathology were examined. The clinical records of 402 women with suspected bowel endometriosis who underwent surgery between January 2002 and April 2009 were reviewed. Bowel involvement was suspected by clinical symptoms, examinations, and imaging studies. Diagnosis of bowel endometriosis was made at laproscopy and histologically proved in the presence of endometrial glands and stroma in 195 patients. No Mean ±SD /ranges Age (years) 195 35.52/ 17–52 BMI (kg/m²) 195 23.18±3.14/18.2-34.3 Nulliparity 79.68% Pelvic pain- 82.3% irregular bleeding- 66.32% dysmenorrhea- 52.33% GI symptoms- 58.63% urinary symptoms- 29.01% dyspareunia- 17.09% previous Laproscopy 44.5% previous laparotomy 10.99% r-AFS stage. 1-6.93 2-18.49 3-13.87 4-60.69 Rectovaginal septum- 56.99 retosigmoid colon- 51.29 pararectal space- 48.70 appendix- 24.35 large intestine- 10.36 small intestine- 4.66 ileocecal- 1.55 Procedures; Enterolysis- 64.76 appendectomy- 36.78 bowel resections- 2.95 bowel shaving- 5.69 Concomitant endometriosis ovary 69.43 pelvic sidewall 45.07 ureter 43.52 bladder 39.37 uterus 26.94 uterosacralligament 26.42

**RESULTS:** In advanced stages of endometriosis, bowel involvements are more likely.

**CONCLUSION:** Our findings indicated that of patients with confirmed bowel endometriosis, only 58.3% had GI symptoms, and 60.69% of patients with bowel endometriosis had stage 4 disease. We would suggest collecting random biopsies from pararectel area–rectovaginal septum in case of extensive disease.

**Is Same-Day Discharge of Laparoscopic Hysterectomy Patients a Safe Option?**

*Miya P. Yamamoto, MD*
Kaiser Permanente East Bay, Oakland, California

*Misa Perron-Burdick, MD; Seth Kivnick, MD; Ramon Yera, MD; Eve Zaritsky, MD*

**OBJECTIVE:** To examine the safety of same-day discharge of patients after laparoscopic hysterectomy. Many gynecologic surgeons who perform laparoscopic hysterectomies admit their patients for 1–2 days; however, a growing number of gynecologic surgeons are practicing same-day discharge. To date, there have been no large studies examining the safety of this practice.

**METHODS:** This was a retrospective cohort study including all same-day discharge laparoscopic hysterectomy patients from Northern and Southern California Kaiser Permanente from 2005 through 2008. The primary outcome of this study was hospital readmission rates for up to 1 year postoperatively. Referencing available large studies on open hysterectomy and expert opinion, a readmission rate of less than 6% was determined to be acceptable. Secondary outcomes included emergency room visits, urgent appointments, postoperative complications, operative time, blood loss, and transfusion rates. Bivariate and multivariate analyses were performed to examine outcomes and potential risk factors.

**RESULTS:** Preliminary analysis of an initial cohort of 1,900 patients demonstrated a readmission rate of less than 5% and an emergency room visit rate of 5%. Estimated blood loss was less than 150 mL. Complication rates were minimal.

**CONCLUSION:** Same-day discharge of laparoscopic hysterectomy is a safe and acceptable alternative to admission, thus reducing the overall hospital and health care burden.

**HIV/AIDS PROGRAMS**

## Pregnancy Outcomes in a Perinatally Human Immunodeficiency Virus (HIV)-Infected Population

*Avishai A. Alkalay, MD*
Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, New York

*Karen Beckerman, MD; Shilpi Mehta, MD; Rodney Wright, MD*

**OBJECTIVES:** To compare disease characteristics and pregnancy outcomes between perinatally human immunodeficiency virus (HIV)-infected patients (PHIP) and horizontally infected HIV patients (HIHP).

**METHODS:** A retrospective chart review was performed at our institution from 2007 to 2009. 14 PHIP were identified and compared with 44 HIHP. Obstetric and neonatal outcomes were extracted from maternal and neonatal records.

**RESULTS:** There was no statistical significance between the two groups with regards to race, body mass index, drug use, diabetes, or hypertension. Pregnancy outcomes showed no statistical significance with regards to cesarean deliveries, induction of labor, and maternal complications of preeclampsia or gestational diabetes. The PHIP were younger (21.6 years versus 33.4 years, $P$ <.01) and less parous (0.2 versus 2.5, $P$ < .01) than the HIHP. We found a trend of earlier prenatal care in the PIHP (10.6 weeks versus 14.4 weeks, $P$ = .13). CD4 count at delivery was significantly lower in PHIP group (320 versus 529 cells per microliter, $P$ <.01). Viral load at delivery was higher (6,246 versus 2,315 copies per milliliter, $P$ = .30), and birth weight was lower (2,452 versus 2,846, $P$ = .15), although these differences were not statistically significant. There was no statistical difference in gestational age at delivery (37.7 weeks versus 36.8 weeks, $P$ = .45), APGAR scores at 1 minute (8.4 versus 7, $P$ = .12), APGAR scores at 5 minutes (8.8 versus 7.6, $P$ = .14), and fetal arterial pH (7.26 versus 7.24, $P$ = .56). No vertical transmission occurred.

**CONCLUSIONS:** PHIP have lower CD4 counts at delivery than HIHP. While other maternal and neonatal outcomes are not significantly different here, further research is warranted as larger cohorts could reveal clinically unique features of pregnancy among perinatally HIV-infected women.

**Human Immunodeficiency Virus (HIV) Testing Practices Among Obstetric Providers in Georgia**

*Andrew W. Helfgott, MD, MHA*
Medical College of Georgia, Augusta, Georgia

*Amy Goss, BS; Christeen Orfield, MSN*

**BACKGROUND:** In 2007, the State of Georgia enacted legislation requiring that obstetric providers offer human immunodeficiency virus (HIV) testing to pregnant women. The law established a standard of care for testing and treatment for HIV infected gravidas and their HIV exposed newborns.

**OBJECTIVE:** The purpose of this project was to evaluate HIV testing practices among obstetricians providing prenatal care in Georgia.

**METHODS:** During the Annual Georgia Obstetrical and Gynecological Society Meeting, held in August 2009, attendees were asked to complete a questionnaire regarding their HIV testing practices.

**RESULTS:** Sixty-eight obstetricians, who routinely provide prenatal care, returned completed questionnaires. Most (88%) were in private practice. One third (31%) had practices with 50% or more private insurance, and 40% reported one half of their population was medically needy (Medicaid). Approximately 50% offered HIV testing, with counseling to 100% of their patients, and 71% reported providing prenatal care to HIV-infected gravidas. Most screened for hepatitis B, gonorrhea, and syphilis routinely. Many care providers (67%) feel HIV screening should be mandatory in pregnancy.

**CONCLUSION:** Despite Georgia statute mandating that providers offer routine HIV screening for all pregnant women, only 50% report adhering to these guidelines. Many feel all women should have mandatory HIV testing. Most understand the importance of testing for sexually transmitted infections but do not universally screen for HIV.

**INFECTIOUS DISEASES**

## High-Risk Behaviors While Taking Depot Medroxyprogesterone Acetate: An Analysis of Chlamydia Infection

*Deborah Bartz, MD, MPH*
Harvard Medical School, Brigham and Women's Hospital, Boston, Massachusetts

*Jessica Kremen; Jennifer M. Fortin, MPH; Alisa B. Goldberg, MD, MPH*

**OBJECTIVE:** To determine if women who use depot medroxyprogesterone acetate (DMPA) practice higher risk sexual behaviors than those who use oral contraceptive pills (OCPs), putting them at greater risk for chlamydia cervical infection.

**METHODS:** In this cross-sectional study, 634 reproductive-aged women using either OCP or DMPA for contraception completed the Safe Sex Behavior Questionnaire (SSBQ), a validated measure of sexual risk taking, and chlamydia screening. Univariate analysis assessed demographic, health, and sexual behavior differences in the two populations. To control for the subjects' concern for active genital infection, logistic regression was performed on behavioral variables that differed between OCP and DMPA users.

**RESULTS:** 450 OCP and 181 DMPA users were recruited. Demographically, OCP users differ from DMPA users in age, race, marital status, education, and pregnancy history ($P$ <.01). OCP users have used their birth control for longer duration ($P$ >.001). Eleven (2%) OCP and 2 (1%) DMPA users had chlamydia. There was no difference in SSBQ scores between OCP and DMPA users. However, OCP users report significantly greater frequency of condom use ($P$ <.001) and earlier age at coitarche ($P$ <.002). This difference remained significant after controlling for subjects' concern for active infection.

**CONCLUSIONS:** Women using OCPs differ from those using DMPA. In both groups, the chlamydia prevalence was less than anticipated. While overall sexual risk taking and chlamydia rates are not different between the two groups, OCP users demonstrate greater condom use, which may protect them from chlamydia infection.

**Association Between Vaginal Lubricant Use and Vaginal Microbiota: A Cross-Sectional Study**

*Alison Dormer*
Emory University School of Medicine, Atlanta, Georgia

*Kevin A. Ault, MD; Rebecca Brotman; Shara Karlebach*

**OBJECTIVE:** Vaginal lubricants contain a wide variety of ingredients, including glycerin and chlorhexidine. We sought to investigate the association between recent use of vaginal lubricants and occurrence of bacterial vaginosis as determined by Gram stain smears.

**METHODS:** Healthy women of reproductive age (N = 409) participated in a cross-sectional study of vaginal microbiota. Women reporting vaginal symptoms were excluded. Vaginal smears and self-reported behaviors were obtained at the assessment. Logistic regression analysis was used to assess the relationship between bacterial vaginosis, defined as Nugent Gram stain score greater than or equal to 7, and lubricant use in the prior 60 days.

**RESULTS:** Nugent scores and lubricant use information were available for 387 participants. A Nugent score indicative of bacterial vaginosis was observed in 24% (97 women). In univariable analysis, lubricant use was not significantly associated with bacterial vaginosis (odds ratio [OR], 1.27; 95% confidence interval [CI], 0.69–2.34.) However, a stratum-specific analysis revealed that among African-American women, lubricant use was associated with bacterial vaginosis (OR, 3.25; 95% CI, 1.20–8.82; $P$ <.05) Estimates for Hispanic, white and Asian women were not significant.

**CONCLUSION:** Lubricant use was associated with disruption of vaginal microbiota as defined by Gram stain smear in African-American women. Further study should investigate vaginal microbial community composition and their resilience to perturbations by exogenous factors. We plan to complete a multivariable analysis to better define the relationship between lubricant use, race, and vaginal microbiota while controlling for other potentially important factors.

**The Influenza Pandemics of 1918, 1957, 2009: Obstetric Consequences and Connections**

*Matthew J. Kim, MD*
Cedars-Sinai Medical Center, Geffen School of Medicine at UCLA, Los Angeles, California

*Sherri Jackson, MD; Adegoke Adeniji, MD; Joann Acuna, MD; Siegfried Rotmensch, MD*

**OBJECTIVE:** H1N1 pandemic influenza is of great significance to global public health. Early reports have suggested an unusually high maternal mortality in pregnancy. This study sought to establish whether the 2009–2010 H1N1 pandemic was more closely associated with the experience from seasonal interpandemic influenzas or the most significant global pandemics of the past century, 1918 H1N1 and 1957 H2N2.

**METHODS:** A search of the medical literature was performed through survey of the Index Medicus (1918–1920, 1957–1959) and MEDLINE (1957–2009) database. The following keywords were searched: pandemic, epidemic, interpandemic, influenza, pregnancy, flu, pregnant, and mortality. A second survey was performed of the listed references from papers identified in the first search to ascertain comprehensiveness.

**RESULTS:**

| | Maternal Mortality | Significant Path | GA Severity | Age Severity |
|---|---|---|---|---|
| **1918** | 30-60% | (Viral Pneumonia) | Late | Reproductive |
| **1957** | 40-50% | Viral Pneumonia | Late | Elderly |
| **Seasonal** | Low | Various | None | Elderly |
| **2009** | 8-13% | Viral Pneumonia | Late | Reproductive |

**CONCLUSIONS:** Early experience with the 2009 H1N1 influenza pandemic amongst pregnant women appears to follow the historical record of the 1918 and 1957 pandemics. If the most severe clinical outcomes are to be prevented, active prevention of influenza exposure to pregnant women in the hospital and vigorous efforts to immunize this at risk population appear warranted.

**SIX 1 and EGFR as Potential Biomarkers for Cervical Dysplasia: A Pilot Study**

*Lisa B. Spiryda, MD, PhD*
*University of South Carolina, School of Medicine, Columbia, South Carolina*

*Alexis Banner; Amy Messersmith, BS; Kim Creek, PhD; Lucia Pirisi-Creek, MD*

**OBJECTIVE:** Although human papillomavirus (HPV) infection is necessary for cervical dysplasia and cancer to develop, exposure to HPV is not predictive of which women will develop cervical dysplasia and cancer. In vitro studies suggest that there may be molecular biomarkers that may better predict which women are at most risk for cervical dysplasia and cancer. This study examines SIX1 and EGFR as potential biomarkers for dysplasia.

**METHODS:** Freshman female students were recruited into the Carolina Womens Care Study (CWCS) designed to prospectively evaluate factors that contribute to persistent HPV infections. One component of this study was to extract mRNA from cervical samples. In this pilot study, mRNA expression of EGFR, SIX1 and actin was examined through real-time PCR. Statistical analysis was performed with a Students *t* test.

**RESULTS:** A cohort of 50 samples was selected for this pilot study to reflect the age and racial distribution of the participants of the CWCS. Women with persistent HPV infections had lower amounts of SIX1 mRNA than women who cleared the HPV infection ($P < .05$). Women with CIN 2/3 expressed less SIX1 than women with normal PAPs or CIN 1 ($P < .05$). There was a nonstatistically significant trend for lower levels of EGFR expression in women with CIN 2/3.

**CONCLUSIONS:** SIX1 mRNA expression is lower in women with persistent HPV infections and CIN 2/3. EGFR mRNA levels trended lower in women with CIN 2/3, although not statistically significant. SIX1 and possible EGFR have the potential to be biomarkers for CIN 2/3. This is being explored in larger patient populations.

**A Comparison of the Collection of the Chlamydia DNA Probe With and Without a Speculum**

*Sharon B. Stechna, MD*
University of Medicine and Dentistry of New Jersey, New Brunswick, New Jersey

*Maryam Hedayatzadeh, MD*

**OBJECTIVE:** To determine whether collecting the DNA probe for chlamydia without the use of a speculum would provide equal diagnostic accuracy with greater patient comfort.

**METHODS:** Patients diagnosed with chlamydia by the traditional collection method returned to the health center for treatment within 2–5 days of diagnosis. Prior to treatment, a second test was performed by placing a collection swab deep into the posterior fornix for 30 seconds. A questionnaire was given to the patient addressing which collection method was preferred.

**RESULTS:** All patients found the new collection method to be preferable to the traditional method; six found it much more comfortable and four found it somewhat more comfortable. Eight patients stated they would be more likely to get sexually transmitted disease testing more frequently if such a method of collection were used. Five of the nine specimens evaluated revealed a negative result (55% sensitivity compared with traditional collection of 97% sensitivity.)

**CONCLUSION:** While all patients preferred the comfort of the collection method under evaluation, the accuracy of the test does not support its use. Clinically, this is particularly significant in cases where the patient is young or has had a sexual trauma where the clinician may be tempted to spare the patient the speculum. In these cases, the author would recommend the clinician explore options such as urine chlamydia collection to avoid false reassurance of a negative result based on collection method.

**Methicillin-Resistant *Staphylococcus Aureus* is a Common Cause of Vulvar Abscesses**

*Andrea Ries Thurman, MD*
Eastern Virginia Medical School, Norfolk, Virginia

*David E. Soper, MD; Tiffany Satterfield, DO*

**OBJECTIVE:** The objective of this study was to estimate the incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) among women with vulvar abscesses and to describe clinical factors associated with inpatient versus outpatient treatment.

**METHODS:** Review of all women with a vulvar abscess who were treated with incision and drainage between the months of October 2006 and March 2008. We reviewed the abscess cultures and evaluated clinical and laboratory variables associated with inpatient versus outpatient treatment.

**RESULTS:** During the 80-week study period, 162 women were treated for a vulvar abscess. MRSA was isolated from 85/133 (64%) of cultured vulvar abscesses. No presenting signs or symptoms were more common among patients with MRSA abscesses. Women with an MRSA vulvar abscess were not more likely to require inpatient admission or experience treatment complications. Inpatient treatment occurred in 64/162 (40%) of patients and was predicted by medical comorbidities: diabetes (odds ratio [OR], 2.29; 95% confidence interval [CI], 1.12–4.72), hypertension (OR, 2.33; 95% CI, 1.06–5.13), initial serum glucose greater than 200 (OR, 3.32; 95% CI, 1.48–7.51), and signs of worse infection: larger abscesses (mean 5.2 centimeters) ($P$ <.001) and elevated white blood cell count greater than 12,000/$mm^3$ (OR, 3.04; 95% CI, 1.44–6.43).

**CONCLUSIONS:** MRSA was the most common organism isolated from vulvar abscesses. Inpatient treatment is more common in women with medical comorbidities, larger abscesses, and signs of systemic illness. An antibiotic regimen with activity against MRSA, such as trimethoprim-sulfamethoxazole, should be considered in similar populations with vulvar abscesses.

**MENOPAUSE**

## The Effect of Omega-3 Fatty Acids on the Relief of Vasomotor Symptoms

*Parastoo Farhady, MD*
Christiana Care Health System, Newark, Delaware

*Patricia I. Carney, MD; William A. Hohman, MD; Matthew K. Hoffman, MD, MPH; Tina M. Grossman, BSN*

**OBJECTIVE:** Alternative therapies to treat vasomotor symptoms are popular. A recently published study showed a significant decrease in vasomotor symptoms with omega-3s, but there were methodological issues. The current study explores the hypothesis that omega-3 fatty acids relieve vasomotor symptoms in menopausal women

**METHODS:** 58 women were randomly assigned to omega-3 dose of 2 g/d versus placebo. 43 women completed the trial (omega-3, n = 21; placebo, n = 22). Changes from baseline to week 12 in number of hot flashes per day, hot flash score (frequency x intensity), satisfaction, and lipids were assessed.

**RESULTS:** At baseline, mean number of hot flashes per day (standard deviation) in the treatment group was 8.5 (4.8 ) and 9.5 (3.9 ) in the placebo group (n.s.). Frequency of hot flashes declined by 2.3 per day in the omega-3 group (27%) and by 2.6 per day in the placebo group (25%) (n.s.). Hot flash score declined by 6.7 in the omega-3 group (36%) and by 8.7 in the placebo group (33%) (n.s.)

Women were classified as “responders” if they had two fewer hot flashes per day. 57% of women in the omega-3 group (12/21) and 41% of women in the placebo group (9/22) were responders (chi-square = 1.13, *P* = .29).

**CONCLUSION:** Supplementation with omega-3 did not significantly decrease daily hot flashes versus placebo in this study. More women responded to omega-3 than placebo (decrease of two or more hot flashes per day), however, this result was not significant. It may be worthwhile to conduct a larger trial with power to detect significant benefits.

**Postmenopausal Women's Beliefs About Society's Perceptions of Midlife Sexuality: The Reveal Study**

*Michael L. Krychman, MD*
Hoag Hospital, Newport Beach, California

*Sheryl Kingsburg, PhD; Susan Kellogg Spadt, CRNP, PhD*

**AIM:** To gain a better understanding of the sexual and vaginal health of postmenopausal "Boomer" women, three sexual medicine experts collaborated with Wyeth Pharmaceuticals on the development and implementation of consumer and health care professional market research, collectively called the REVEAL (REvealing Vaginal Effects At mid-Life) Surveys.

**METHODS:** These surveys conducted in December 2008, consisted of a national quantitative telephone poll conducted with 1,006 natural postmenopausal women aged 45–65 years, who were not taking hormones. A subgroup of women who experienced sexual dysfunction in the form of pain during sexual intercourse was further evaluated (n = 255).

**RESULTS:** Postmenopausal women endorsed the following statements: society constrains the sexual expression of women their age more so than men their age (75% agreed, 80% of the subgroup agreed); society is more accepting of discussing men's physical or sexual problems than women's physical or sexual problems (73% agreed; 77% of the subgroup agreed); society would prefer to believe that women "my age" do not have sex (53% agreed; 59% of the subgroup agreed).

**CONCLUSION:** The postmenopausal women surveyed believe that there remains significant societal bias with respect to midlife women's sexuality and a double standard between male and female sexuality. These women believe that while it is still socially and culturally acceptable to discuss male sexuality issues, female sexual function remains a taboo topic.

**Efficacy of a Combination of Concentrated Herbal Extracts in the Management of Vasomotor Symptoms**

*Chadwick S. Leo, DO*
Jersey Shore University Medical Center, Neptune, New Jersey

*Mark G. Martens, MD*

**OBJECTIVE:** To determine the safety and efficacy of a novel nutritional supplement containing concentrated herbal extracts for the relief of vasomotor symptoms related to menopause.

**DESIGN:** This was a double-blind, randomized, placebo controlled study. 186 women with irregular or absent menstrual cycles suffering from at least five moderate to severe hot flashes per 24-hour period were randomized to receive study supplement or placebo. Study supplement consisted of capsules containing hypericin, 2.7 mg; isoflavones, 125 mg; isoflavones, 60 mg; triterpenes 4 mg; and ginsenosides, 16 mg; or placebo, orally, twice daily. Patients filled out a 3-day symptom diary prior to acceptance into the study and after 6 weeks of study participation.

**RESULTS:** 164 patients completed 6 weeks of study participation and returned their 3-day symptom diary. When compared with placebo, the supplement group showed a statistically significant difference, ($P$ <.05) in patients reporting a decrease in both frequency (83.5% versus 32.9%) and severity (89.4% versus 41.8%) of hot flashes and night sweats. The study group also reported less trouble staying asleep and improvement in mood. There was no difference in side effects reported by both groups.

**CONCLUSION:** The use of the combination of concentrated standardized herbal extracts in this study offers a safe and effective treatment for vasomotor symptoms associated with the hormonal fluctuations of menopause. It also appears effective for improvement of mood and sleep dysfunction.

**OBSTETRICS**

## Effect of Pelvic Support Belt on Puerperal Urinary Incontinence

*Kohzo Aisaka, MD, PhD*
Hamada Hospital, Tokyo, Tokyo, Japan

*Yuichiro Miyamoto, MD, PhD; Yumiko Ikezuki, MD, PhD; Naoko Yamamoto, MD, PhD; Yuji Ikeda, MD, PhD; Seiichiro Obata, MD, PhD*

**OBJECTIVE:** There are some patients who complain of urinary incontinence after vaginal delivery. It is reported that the main cause of the puerperal urinary incontinence is too much relaxation of the pelvic floor muscles and the pelvic bones that sustain them. The present study was performed to elucidate whether the pelvic support belt was useful to improve the urinary incontinence without medication.

**METHODS:** Forty-seven patients who were suffering from puerperal incontinence were subjected with the enough informed consent. They were divided into two groups: wearing the pelvic support belt (group A, 24 cases), without wearing the belt (group B, 23 cases). The duration until the recovery was compared between these two groups. The changes of the pelvic symphysial angle (PSA) were also observed for the objective index using transabdominal ultrasonography.

**RESULTS:** The significant improvement was observed in the duration of the recovery by using of the pelvic support belt (A: 3.3+/-0.4 versus B: 6.7+/-2.9, days after the delivery, *P* <.01). The PSA values were also improved in the patients of the group A (121.6+/-36.9 to 88.8+/-16.5 degrees, before and after wearing the belt, *P* <.001). There was no severe complication during this study.

**CONCLUSION:** The result of the improvement of the PSA values show that the puerperal urinary incontinence may be due to the pelvic instability after the vaginal delivery. The temporary urinary incontinence after vaginal delivery can be treated promptly by using the pelvic support belt without any medications.

**Changes in Methadone Maintenance Therapy During and After Pregnancy**

*Brittany B. Albright, BS*
University of New Mexico School of Medicine, Albuquerque, New Mexico

*Lesley de la Torre, DO; Patrick Abbott, MD; Sylvia Price, RN, FNP; William F. Rayburn, MD, MBA*

**OBJECTIVE:** Since Methadone is eliminated more rapidly during pregnancy, this study was undertaken to better understand anticipated changes in daily methadone doses as a guide for improved perinatal care.

**METHODS:** This observational study was performed on consecutively chosen women who sought prenatal care before 20 weeks of gestation between January 2003 and August 2009 in our specialized multidisciplinary methadone program. Changes in the single daily methadone dose after initial in-hospital stabilization were according to a standard opiate withdrawal scale. Patients were divided into three groups according to their initial daily dose (low: less than 60 mg, medium: 60–89 mg, high: greater than or equal to 90 mg).

**RESULTS:** A small proportion of 128 eligible candidates (22.7%) began taking methadone before conception, while most began treatment by the end of the first trimester. As gestation advanced, the dose was increased (86.7%) rather than remaining the same (7.8%) or decreasing (5.5%) as gestation advanced. Median increase in dose was greatest among persons who began on a low dose (35 mg; 95% confidence interval, 10–65 mg) rather than on medium or high doses (15 mg; 95% confidence interval, 10–55 mg). Doses remained essentially unchanged beyond 32 weeks of gestation until delivery. By the sixth postpartum week, most patients remained within 10 mg of their dose at delivery, and none returned to their prepregnancy dose.

**CONCLUSION:** Increase in daily methadone dose with advancing gestation was most apparent when started on a low dose. The same daily dose was maintained during the third trimester and after delivery.

**Maternal–Neonatal Outcome With *Staphylococcus Aureus* Rectovaginal Colonization**

*Omrou Alchyib, MD*
*Lutheran Medical Center, Brooklyn, New York*

*Nibal Ghanim, MD; Donald Morrish, MD; Iffath Hoskins, MD; David Tompkins, MD; Kell Julliard, MA*

**OBJECTIVE:** To estimate the prevalence of rectovaginal colonization by *Staphylococcus aureus* (SA) among pregnant women, and evaluate its association with maternal and infant outcomes.

**METHODS:** Between January 2004 and December 2008, rectovaginal screening cultures that detected both group B streptococcus (GBS) and SA were obtained in women at 35 weeks of gestation or more. Maternal colonization by SA was linked to a computerized database and retrospective chart review to determine invasive neonatal infection and maternal outcomes at the time of delivery through 6 months of age.

**RESULTS:** A total of 6,630 GBS screening cultures met study criteria. 770 (11.6%) GBS isolates and 68 (1%) SA were identified. Of these 68 patients, 2 developed chorioamnionitis. In both cases unspecified SA colonization was documented. Neither these 68 mothers nor their infants had SA-related complications. The rate of maternal methicillin-resistant SA colonization was 0.1% (7/6,630). Concomitant MRSA/GBS positive cultures were rare (1/6,630). GBS-positive patients were three times more likely to be colonized with MRSA than GBS-negative patients (relative risk, 3.34; 95% confidence interval, 1.59–7.05). The rates of GBS-positive cultures differed significantly by primary language: Spanish 10% (324/3,249), English 13.7% (288/2,100), Russian 26.9% (7/26), Chinese 11.5% (130/1,128), Arabic 15.9% (13/82), and other 17.8% (8/45) ($P$ <.001).

**CONCLUSION:** The percentage of SA colonization was lower than that of other medical centers as was overall GBS carriage rate. In our population, SA did not seem to predispose to either maternal or infant morbidity or mortality up to 6 months postpartum.

**Prenatal Discussion of Concerns Regarding Breastfeeding and Breastfeeding Initiation Rates**

*Karen L. Archabald, MD*
Women and Infants Hospital/Brown University, Providence, Rhode Island

*Jessica Illuzzi, MD, MS; Lisbet Lundsberg, PhD; Elizabeth Triche, PhD*

**OBJECTIVE:** To compare breastfeeding initiation rates between women whose concerns regarding breastfeeding were addressed by their prenatal care provider with those whose concerns were not addressed, among women who entered pregnancy undecided regarding infant feeding plans.

**METHODS:** A cross-sectional study with convenience sampling of all English-speaking or Spanish-speaking postpartum women was completed at a tertiary care institution between October 2006 and April 2007 who reported that they had entered pregnancy undecided regarding infant feeding plans. The primary outcome variable was method of infant feeding postpartum. The primary exposure of interest was provider–patient discussion regarding breastfeeding concerns. Specifically, participants were asked if they had concerns regarding breastfeeding and whether these were addressed by their provider at any point during their prenatal care. Multinomial logistic regression was used in the analysis.

**RESULTS:** A total of 75 patients who made their decision during pregnancy were included in the study. 67 (89%) were asked their feeding plans by their provider and 38 (51%) had their concerns regarding breastfeeding addressed. Women whose concerns were addressed were more likely to be exclusively breastfeeding (relative risk, 9.1; 95% confidence interval, 1.2–67.9) compared wiht formula feeding. These findings persist after adjusting for other prenatal counseling regarding feeding choice, race–ethnicity, maternal education, income, and type of provider.

**CONCLUSIONS:** Communication centered on patients' concerns has been shown to be an effective method for relaying biomedical information. Addressing concerns about breastfeeding can play an essential role in influencing breastfeeding initiation rates in women who are undecided regarding their feeding plans during pregnancy.

**Switching from Magnesium Sulfate to Alternative Tocolytics: Impact on Outcomes and Hospital Utilization**

*Graham G. Ashmead, MD*
Winthrop University Hospital, Mineola, NewYork

*Padmalatha Gurram, MD; Patricia A. Patrick, MPH; Donald A. Brand, PhD*

**OBJECTIVE:** Evidence about adverse effects of magnesium sulfate for tocolysis prompted our hospital to phase out this drug in 2006, substituting alternatives such as calcium channel blockers, indomethacin, or betamimmetics. The present study examined the effect of this change on maternal and neonatal outcomes and on hospital utilization.

**METHODS:** This retrospective study examined 200 randomly selected women who received tocolytics at our hospital and their 246 neonates during 2005 and 2007, that is, before and after the phase out. The 2006 transition year was excluded.

**RESULTS:** A total of 70 of 100 patients received magnesium sulfate in 2005 versus 15 of 100 patients in 2007 (*P* <.001). The frequency of minor side effects declined significantly in 2007 (*P* <.01), but no significant difference in any other maternal outcomes (Table 1). Birth weight, neonatal morbidities, neonatal deaths, admissions and length of stay in the neonatal intensive care unit did not differ significantly. Hospital utilization statistics were similar in both groups (Table1).

**CONCLUSIONS:** The phasing out of magnesium sulfate tocolysis at our hospital did not adversely affect maternal or neonatal outcomes and resulted in significant decline in the frequency of maternal minor side effects.

Table 1 - Maternal Outcomes and Hospital Utilization

*Table shows number of patients or mean ± SD*.

| | 2005 (N = 100) | 2007 (N = 100) |
|---|---|---|
| Gestational age at delivery (wk) | 34.6 ± 4.7 | 34.1 ± 5.0 |
| Delivery less than 48 hrs | 11 | 16 |
| Any Major side effect[1] | 20 | 16 |
| Any Minor side effect | 52 | 33 |
| Outpatient visits | 0.9 ± 1.6 | 1.1 ± 1.6 |
| Hospitalizations | 1.6 ± 0.7 | 1.6 ± 0.7 |
| Inpatient days | 13.3 ± 18.1 | 11.1 ± 14.9 |
| Intensive care unit admissions | 0 | 1 |

1 Chest pain, shortness of breath, pulmonary edema, and hypotension

**Pregnancy Complicated by Diploid–Triploid Mosaicism**

*Tiki Bakhshi, MD*
Tripler Army Medical Center, Honolulu, Hawaii

*Bruce R. Ball, MD; Donald J. Gloeb, DO; Christina C. Hill, MD; Brian T. Pierce, MD*

**BACKGROUND:** Diploid–triploid mosaicism is a rare chromosomal abnormality. Women with a mosaic fetus demonstrate diverse clinical manifestations characterized by placental abnormalities, intrauterine growth restriction (IUGR), preeclampsia, and associated anomalies.

**CASE:** A 36-year-old primigravida presented as a transfer of care from Japan. Her pregnancy was complicated by an abnormal serum screen with a greater than 1:2 risk for Trisomy 21. Amniocentesis was performed that revealed a mosaic pattern, 90% 46, XX and 10% 69, XXY. Ultrasound findings demonstrated IUGR, arthrogryposis, rocker bottom feet, umbilical vein varix, and an enlarged placenta. She underwent extensive counseling by maternal–fetal medicine specialists, neonatologists, a genetic counselor, and a developmental pediatrician and met with the hospital ethics committee. The patient and her husband decided against fetal monitoring or resuscitation. She developed severe preeclampsia at 29 3/7 weeks and underwent an induction of labor and vaginal breech delivery. The fetus died shortly after delivery.

**CONCLUSIONS:** Obstetric complications associated with diploid–triploid may include preeclampsia, growth restriction, prematurity, mental retardation, physical disability, and profound impairment. Given the potential complications and variable phenotypic expression, patients require extensive counseling regarding implications for the newborn. Management to ensure an optimal obstetric outcome requires a multidisciplinary approach.

**Vaginal Delivery Versus Cesarean Delivery: Changes in Patient Preferences Before and After Delivery**

*Kenneth I. Barron, MD*
University of Massachusetts Medical School, Worcester, Massachusetts

*Tiffany A. Moore Simas, MD, MPH, MEd; Janet Hardy, PhD, MSc, MPH; Erin Habecker, BA; Sharon Jackson, MPH*

**OBJECTIVE:** To examine patients' preferences regarding mode of delivery (MOD) before and after giving birth.

**METHODS:** Pretested questionnaires were self-administered to Spanish-literate and English-literate subjects in a tertiary-care hospital between October 2007 and April 2009. A baseline survey (13–22 weeks) was administered during prenatal visits. A postpartum survey was administered 6 weeks postpartum or later during clinical visit or by mail.

**RESULTS:** Of 348 women enrolled, 78% provided nonconflicting responses to internal-validity questions and formed the final sample (N = 271). There were no demographic differences between conflicting or nonconflicting responders. Subjects were a mean of 29.3 years old (standard deviation, 6 years), white (85%), multiparous (53%), and educated (83% some college or beyond). At baseline, overall MOD preferences were 73% vaginal delivery (VD), 11% cesarean delivery (CD) and 16% no preference. Preferences related to past delivery experiences (*P* <.0001). Only 6.3% nulliparas reported CD preference. Actual MOD was 74% VD, 26% CD. Top reasons for MOD preference at baseline versus postpartum were more natural (46.1%, 32.2%), convenience (27%, 37.4%), and safety concerns (11.3%, 21.7%). On both surveys, subjects rated CD betterregarding pain control, delivery speed, convenience, and likelihood of their own doctor present; and VD was rated better regarding recovery speed and length of stay. At postpartum, subjects rated VD worse regarding urine and bowel issues and future sexual pleasure. Birth experience satisfaction was highest when actual MOD was consistent with desired MOD (*P* <.001).

**CONCLUSION:** In our study population, 6.3% nulliparas and 11%, overall, prefer CD at baseline; 17% prefer CD at postpartum. Reasons for patient preferences include prior delivery experiences, perception of VD as more natural, concern for safety, and convenience.

**Risk Factors for Late Preterm Birth**

*John R. Barton, MD*
University of Kentucky, Lexington, Kentucky

*Christie L. Young, RN, MPH; Heather M. Bush, PhD; Steven Browning, PhD; Glyn G. Caldwell, MS, MD*

**OBJECTIVE:** There is growing concern as to the rate of late preterm birth in the United States and, in particular, a concern for inappropriate elective preterm birth based on physician choice. Our goal was to evaluate the incidence and risk factors for late preterm birth.

**METHODS:** A sample of 156,903 singleton births from 2003–2005 was obtained from birth certificate data examined at a county level. Data were then compared with national benchmarks available in the literature. Births were defined as term (37 0/7–40 0/7 weeks of gestation) and late preterm (34 0/7–36 6/7 weeks of gestation). Variables studied include maternal characteristics and characteristics of prenatal care and delivery. Comparisons between groups were performed using chi-square tests and logistic regression.

**RESULTS:** There were 143,997 term births and 12,643 late preterm births. During the study period, rates of late preterm birth by county varied from 0.01 to 9.8 births per 1,000 eligible women. After adjusting for maternal characteristics (age, education, and race) and delivery type, births where prenatal care was lacking (odds ratio [OR], 2.14; 95% confidence interval [CI], 2–2.28), cesarean deliveries (OR, 1.27; 95% CI, 1.22–1.31) and those where tobacco was used (OR, 1.18; 95% CI, 1.03–1.31) were found to have a higher odds of late preterm delivery.

**CONCLUSIONS:** During our study period, the mean incidence of late preterm birth was 8.1%. These data document that patient factors are an important element of the risk for late preterm birth. To impact this incidence, efforts to insure expectant mothers' access to adequate prenatal care and early education to refrain from cigarette smoking must be undertaken.

**Fetal Heart Rate Patterns in Term Nulliparous Patients in Active Labor**

*Timothy S. Batig, CPT, MD*
Madigan Army Medical Center, Tacoma, Washington

*Jason A. Pates, MAJ, MD; Peter E. Nielsen, COL MD*

**OBJECTIVE:** To determine the prevalence of each category of electronic fetal monitoring using a three-tier fetal monitoring interpretation system. Secondary objective includes determination of the relationship between the assigned category of the fetal heart rate tracing to clinically relevant outcomes (ie, the fetal APGAR scores at 1 minute and 5 minutes and admissions to the neonatal intensive care unit [NICU]).

**METHODS:** A retrospective chart review of the fetal heart rate tracing 2 hours prior to delivery (evaluated in 30-minute intervals) of 200 consecutive nulliparous patients at term admitted in active labor with singleton pregnancies and cephalic presentation from January 2008 through December 2008 at a single tertiary care medical center.

**RESULTS:** Between 90 minutes and 120 minutes prior to delivery, 72.5% of fetal heart rate tracings were classified as category I with the remaining 27.5% classified as category 2. As delivery approached, the majority of fetal heart rate tracings transitioned into category 2. Eighty seven percent of fetal heart rate tracings were category 2 during the final 30 minutes proceeding delivery. There was no correlation between the infants admitted to the NICU and the category of fetal heart rate tracing. Finally, the 5-minute APGAR score did not correlate with the category of fetal heart rate tracing.

**CONCLUSION:** Two hours from delivery, a majority of fetal rate tracings are category 1. During the final 30 minutes prior to delivery, a majority of the heart rate tracings transition to category 2 without correlation with APGAR scores or NICU admissions.

**Uterine Arteriovenous Malformation and Placenta Increta in Pregnancy After Endometrial Ablation**

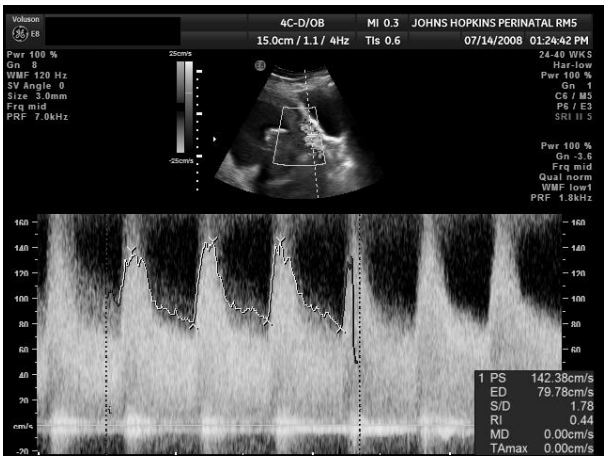
*Meredith Lee Birsner, MD*
*The John Hopkins Hospital, Baltimore, Maryland*

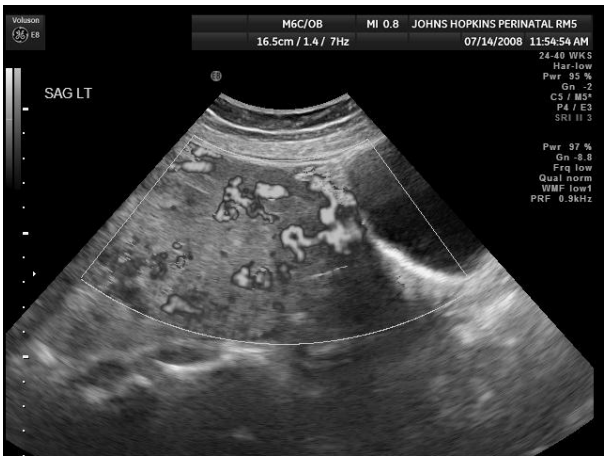
*David Bonekamp, MD, PhD; Kimberly L. Levinson, MD, MPH*

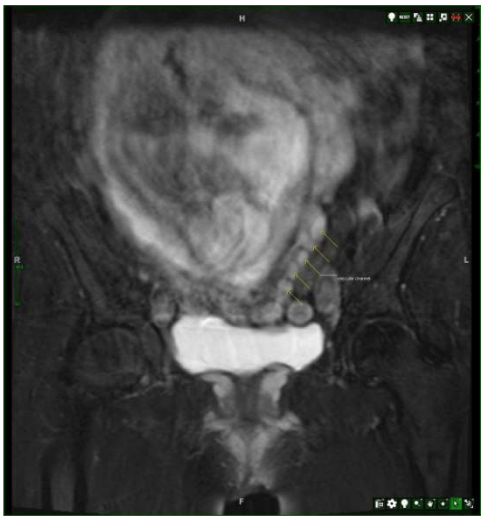
**BACKGROUND:** Endometrial ablation is an effective, uterus-preserving technique to manage menorrhagia. Pregnancy after ablation is uncommon, although frequently associated with complications. One such potential complication is abnormal placentation. Acquired uterine arteriovenous malformations (AVM) are not common after ablation but may develop after trauma such as curettage. Occurrence of these two complications simultaneously during a postablation pregnancy has not previously been reported.

**CASE:** A 34-year-old gravida 4 para 3-0-0-3 who conceived 8 years after endometrial curettage and subsequent ablation was transported to our metropolitan tertiary care center at 28 and 5/7 weeks of gestation with vaginal bleeding secondary to uterine arteriovenous malformation. Acquired uterine arterioveous malformation presence was confirmed on ultrasound results (Fig. 1–2) and further visualized with magnetic resonance imaging (Fig. 3). Preterm labor with heavy vaginal bleeding developed after a period of bedrest, and cesarean delivery was performed. Placenta increta was additionally found intraoperatively, requiring total abdominal hysterectomy. Estimated blood loss was 1,800 cc. Her postoperative course was complicated by small bowel obstruction, successfully managed in conservative fashion. She was discharged to home on postoperative day 9 in good condition.

**CONCLUSION:** Pregnancy after endometrial ablation is associated with abnormal placentation, and when ablation is combined with dilatation and curettage, development of uterine arteriovenous malformation can occur, resulting in high-risk pregnancy and complicated delivery. Preoperative planning and appropriate subspecialist involvement can limit perioperative morbidity. Appropriate and strict contraceptive counseling for patients undergoing ablation can prevent unintended postprocedure pregnancies and their associated complications.



**Effects of Statewide Prenatal Screening: A Single University Experience**

*Yair Blumenfeld, MD*
Stanford University, Stanford, California

*Joanne Taylor, MSc; Louanne Hudgins, MD; Joyce Sung, MD; Jane Chueh, MD; Yasser El-Sayed, MD*

**OBJECTIVE:** In March 2009, the California Genetic Disease Branch introduced a statewide combined first-trimester and second-trimester aneuploidy screening program. Through this program, Medi-Cal (state-insured) patients who previously only had access to state-sponsored second-trimester prenatal screening were now eligible for first-trimester, second-trimester, and integrated screening. Our study's objective was to assess the effect of greater access to prenatal screening on available resources at a single academic center.

**METHODS:** A review of prenatal screening and diagnostic procedures from a single academic center (Stanford University) was conducted. The volume of NT, CVS, and amniocentesis procedures performed during an 8-month period, 4 months prior to the introduction of the state program (December 1, 2008–March 31, 2009) and 4 months following the program (April 1, 2009–July 31, 2009), were collected and analyzed.

**RESULTS:** Between December 2008 and July 2009, 3,033 women underwent NT screening, 703 amniocentesis procedures were performed, and 211 CVS procedures were performed. Comparing the 4-month periods before and after the introduction of the program, a significantly greater number of NT procedures were performed (1,767 versus 1,266, $P = <.0001$). This increase was not associated with a greater number of CVS (117 versus 94, $P = .13$), or amniocentesis procedures (343 versus 360, $P = .55$).

**CONCLUSION:** The introduction of the California prenatal screening program dramatically increased the number of NT, but not CVS or amniocentesis procedures performed, though larger studies are required to assess this effect. Prenatal diagnostic centers participating in the California program may need to accomodate a greater number of women presenting for first-trimester screening.

**Diagnostic Criteria for Gestational Diabetes Mellitus: The Racial Impact**

*Meaghan R. Bowling, MD*
University of Alabama at Birmingham, Birmingham, Alabama

*Joseph Biggio, MD; Victoria Chapman, MPH, BSN; Cherry Neely*

**OBJECTIVE:** The Carpenter–Coustan (CC) criteria for diagnosis of gestational diabetes mellitus (GDM) have been increasingly adopted over National Diabetes Data Group (NDDG) criteria in attempts to decrease adverse maternal–fetal outcomes. Because GDM varies by race, we examined whether adoption of CC results in a differential rate of GDM and maternal–fetal outcomes by race.

**METHODS:** Women who underwent glucose challenge from 1991–2008 were categorized by race and divided into four groups: euglycemic, impaired glucose tolerance (IGT), CC, and NDDG. The primary outcome was prevalence of GDM by each criterium by race. Secondary endpoints included maternal (cesarean delivery, operative delivery, third-degree and fourth-degree lacerations, labor induction) and fetal outcomes (birthweight, macrosomia, shoulder dystocia, apgar scores, and fetal demise). 41,630 women were identified.

**RESULTS:** Use of CC criteria increased prevalence of GDM by 69% in caucasians, 57% in African-Americans, and 77% in Hispanics. Cesarean delivery rate was lower in the CC group overall (26.4 versus 31.7%, $P = .007$) and in caucasians (20% versus 32%, $P = .0009$). All other secondary outcomes were similar when comparing CC with NDDG. The CC group overall had higher rates of cesarean delivery (26.4% versus 21.0%, $P = .0003$) and macrosomia (15% versus 8.3%, $P < .0001$) as well as higher birthweight (3,379 g versus 3249 g, $P < .0001$) when compared with IGT.

**CONCLUSION:** Utilization of CC criteria increases the prevalence of GDM, with the greatest increase in Hispanics. Maternal–fetal outcomes are similar between the CC and NDDG groups overall and by race. However, when compared with patients with the mildest glucose intolerance (IGT), the CC group is at higher risk for adverse outcomes.

**Risk Factors for the Development of Chorioamnionitis in a Teaching Institution**

*Zachary S. Bowman, MD, PhD*
University of California, San Diego, San Diego, California

*Gena Clark, RNC; Leniel Cole, BSN; Gladys A. Ramos, MD*

**OBJECTIVE:** To examine risk factors associated with the development of chorioamnionitis at the University of California, San Diego.

**STUDY DESIGN:** Retrospective cohort study of women presenting in labor at term from June 1, 2008 to August 31, 2008. Exclusion criteria included patients with scheduled cesarean delivery, preterm premature rupture of membranes, preterm labor or, who had evidence of chorioamnionitis prior to admission. Data was collected regarding the number of exams, hand washing practices, gestational age (GA) at delivery, hours from rupture of membranes (ROM) to delivery, GBS status, maternal diabetes, epidural rate, and maternal demographic characteristics. Univariate and multivariate analyses were performed.

**RESULTS:** 394 patients met inclusion criteria. The chorioamnionitis rate was 5.8%. Those who developed chorioamnionitis had a higher mean number of examiners (3.5 ± 1.7 versus 2.6 ± 1.4, $P$ <.005) and number of exams (8.0 ± 4 versus 5.5 ± 2.9, $P$ <.001). Additionally, there was a longer mean interval in hours from ROM to delivery (13.5 ± 11.2 versus 7.6 ± 9.1, $P$ <.05) and mean GA at delivery (40 ± 1.1 weeks versus 39 ± 2.5 weeks, $P$ <.05) associated with chorioamnionitis. In multivariate analysis, GA at delivery (odds ratio [OR], 1.52; 95% confidence interval [CI], 1.05–2.19) and length of time from ROM to delivery (OR, 1.04; 95% CI, 1.001–1.08) were the most important predictors for the development of chorioamnionitis.

**CONCLUSION:** Gestational age at delivery and interval between rupture of membranes to delivery are the most important predictors for the development of chorioamnionitis at a teaching institution.

**Prevalence of Chlamydia and Gonorrhea in an Obstetric Resident Patient Population**

*Electra C. Bradshaw-Graham, MD*
Bayfront Medical Center, Saint Petersburg, Florida

*José A. Prieto, MD, MPH*

**OBJECTIVE:** Determine chlamydia and gonorrhea prevalence in a resident obstetric population. Determine if risk factor assessment alone can be used in lieu of universal repeat screening during the third trimester of pregnancy.

**METHODS:** Retrospective chart review of patients who gave birth between January 1, 2005 and December 31, 2007. Patients receiving prenatal care with the residents and underwent two screenings for chlamydia and gonorrhea were included. Several risk factors for these infections were assessed for their ability to identify at-risk patients. Statistical analysis performed with $P < .05$ being statistically significant.

**RESULTS:** One hundred ninety four patients analyzed. Prevalence of chlamydia or gonorrhea was 14.9%. There was no statistically significant difference between the infection positive and negative group with regard to maternal age, gravidity, parity, preterm delivery, preterm premature rupture of membranes, chorioamnionitis, and postpartum endometritis. Race (African American ($P = .014$) and caucasian ($P = .040$) and being married ($P = .001$) was statistically significant. History of sexually transmitted infection appears the most significant risk factor (relative risk = 2.595).

**CONCLUSIONS:** In pregnancy, these infections pose a potential risk and are of great concern for the obstetrician. Results suggest risk factor assessment alone was neither sensitive nor specific for predicting these infections and should not be used alone. African-American race appears to be a more significant risk factor when compared with other ethnicities. Single marital status, irrespective of race or history of sexually transmitted infections appears to be a significant risk factor. A conscious effort to decrease the prevalence in our patient population, and thereby improve this health disparity, is warranted.

**The Frequency and Effects of Prior Antenatal Corticosteroid Therapy on Late Preterm Birth Infants**

*Carlos A. Carreno, MD*
University of Texas Health Science Center at Houston, Houston, Texas

*Jerrie S. Refuerzo, MD; Marium Holland, MD; Susan Ramin, MD; George Saade, MD; Sean C. Blackwell, MD*

**OBJECTIVE:** To study the effects of prior antenatal corticosteroid therapy (ACS) on neonatal respiratory morbidities following late preterm birth (LPTB).

**STUDY DESIGN:** All LPTBs (34 0/7–36 6/7 weeks of gestation) delivered over a 1-year period, June 2007–June 2008, at a tertiary care hospital were studied. Women with stillbirth, major fetal anomalies, and multiple gestations were excluded. Maternal factors and neonatal outcomes were abstracted from medical records. Neonatal outcomes were compared between pregnancies based on ACS prior therapy (yes or no). A composite respiratory outcome was defined as mechanical ventilation, CPAP greater than 40% oxygen for more than 2 hours and oxygen greater than 40% for more than 4 hou,rs.

**RESULTS:** 509 LPTB met study criteria and 7% (n = 34) had prior ACS therapy. Most had exposure more than 7 days prior to delivery (4%, n = 22). There were no differences in the rate of prior ACS based on LPTB delivery indication: 6% of SPTB/PPROM, 8% medical indication, and 5% elective. After adjusting for maternal race, delivery indication, cesarean delivery without labor, and gestational age, ACS was not associated with respiratory morbidity (odds ratio [OR], 0.88; 95% confidence interval [CI], 0.41–1.91). Advancing gestational age was the only variable associated with respiratory morbidity (OR, 0.52; 95% CI, 0.28–0.97).

**CONCLUSION:** In our population, prior ACS was infrequent and was not associated with improvements in neonatal respiratory morbidity.

**Maternal Transfers to a Tertiary Care Center: Admission Diagnoses and Gestational Age**

*Suchitra Chandrasekaran, MD*
Ohio State University, Columbus, Ohio

*Philip Samuels, MD; Cynthia Shellhaas, MD, MPH*

**PURPOSE:** To analyze changes in admitting diagnoses and gestational ages among obstetric patients transferred to a tertiary care center over two 5-year periods.

**METHODS:** We studied two groups of patients (Group A, 1995–1999, N = 3,361; Group B, 2004–2008, N = 2,457) that were transferred to our tertiary care center for high-risk obstetric care. The change in proportion of transfers for 28 different admitting diagnoses and gestational age ranges were calculated and compared between the two groups. Data analysis was performed using ANOVA, and posthoc comparisons were made with Tukey's procedure.

**RESULTS:** The proportions of maternal transfers were significantly greater for vaginal bleeding, preeclampsia, VBAC, pancreatitis, pyelonephritis, and drug detoxification in 2004–2008 compared with 1995–1999. Conversely, the proportions of transfers significantly decreased for HELLP, nonreassuring fetal well-being, term inductions, PPROM, and PTL from 2004–2008. In both groups, the proportion of transfers for the gestational age range of 27–33 weeks was greater than all other ranges ($P$ <.001).

**CONCLUSIONS:** The number of transfers decreased by 27% from 1995–1999 to 2004–2008. The increase in patients transferred for detoxification reflects increased support for these patients at our institution. The proportion of decrease in transfers for PPROM and PTL suggests improved neonatal services in community hospitals, thereby reducing the need to transfer "late-preterm" fetuses. The finding that most patients were transferred between 27 weeks and 33 weeks of gestation in both groups supports this conclusion.

**Successful Delayed Interval Delivery**

*Eericca M Clegg, DO*
Geisinger Medical Center, Danville, Pennsylvania

*Raisa Platte, MD*

**INTRODUCTION:** Premature birth of one fetus in multiple gestations occurs in 5% of multifetal gestations. Delaying the delivery of the remaining fetus(es) can be feasibly managed in some cases. Delayed interval delivery, although recorded as early as 1880, continues to be controversial because there is limited data suggesting a proper approach. The aim of this report is to add our experience to limited literature regarding the management and treatment of this obstetric complication.

**CASE REPORT:** A 29-year-old nulliparous patient presented with preterm premature rupture of membranes of twin A at 16 5/7 weeks of fertility-assisted gestation. After extensive counseling, the patient choose conservative management for twin A, followed by delayed interval delivery for cotwin B. 18 days later, spontaneous delivery of twin A took place and McDonald cerclage was performed, followed by antimicrobial prophylaxis and Indocin tocolysis for 72 hours. Outpatient surveillance was consistent with biweekly cervical length by transvaginal ultrasonography, weekly laboratory testing for intraamniotic infection, and steroid therapy at 24 weeks of gestation. At 36 1/7 weeks of testation (118 days after cerclage placement), severe preeclampsia was diagnosed and cesarean delivery was performed with delivery of a healthy male neonate. No admission to the neonatal intensive care unit was required.

**CONCULSION:** Although this case represents a latency period of 118 days, prolonging pregnancy by any amount of time has demonstrated improved neonatal outcome. Delayed interval delivery may be considered in tertiary care center setting where coordination of care closely provided by maternal fetal medicine and neonatal intensive care specialists.

**Genetic and Environmental Risk Factors for Postpartum Depression**

*Patrick R. Finley, PharmD, BCPP*
Midwestern University College of Pharmacy - Glendale, Glendale, Arizona

*Shareen Y. El-Ibiary, PharmD, BCPS; Steve P. Hamilton, MD, PhD; Carolyn A. Erdman, BS; Patricia A. Robertson, MD; Rebecca Abel, BA, LCSW*

**OBJECTIVE:** To compare potential genetic and environmental risk factors for postpartum depression (PPD) between mothers with PPD and those exhibiting minimal depressive symptoms.

**METHODS:** Mothers were screened for PPD during their well-baby visit 6 weeks after delivery. Subjects completed the Edinburgh Postnatal Depression Scale, and those with scores greater than 14 or less 7 were recruited for case and control groups, respectively. Qualified subjects returned within 1 week for assessment with questionnaires: Dyadic Adjustment Scale, MOS Social Support Survey, Life Threatening Events Survey, and QIDS-SR16 scale. A structured clinical interview confirmed major depression diagnosis. A blood sample was obtained to analyze 81 single nucleotide polymorphisms (SNPs) in 12 genes hypothesized to be PPD-related.

**RESULTS:** Sixty-nine subjects were recruited, 21 did not complete the study, leaving 48 participants enrolled (24 cases and 24 controls) for analysis. Preliminary data identified history of depression or anxiety disorder as risk factors for PPD. Three SNPs in the serotonin 2A receptor (HTR2A) gene were associated with PPD, with the strongest association to rs6311, a functional promoter SNP ($P$ = .002, odds ratio, 0.25; 95% confidence interval, 0.10–0.63), a finding robust to population stratification. Gene-wide association was significant for HTR2A (permuted $P$ = .008) but not when corrected for all genes. EPDS scores in cases were nominally associated with a SNP in the progesterone receptor gene ($P$ = .008).

**CONCLUSIONS:** This analysis of a small PPD dataset is the first to suggest that DNA variation in the HTR2A gene is associated with the diagnosis of PPD.

**Neonatal Injury Associated With Severe Maternal Morbidity During Delivery Hospitalizations**

*Nelli Fisher, MD*
Albert Einstein College of Medicine/Montefiore Medical Center, Bronx, New York

*Heather S. Lipkind, MD, MS; Dena Goffman, MD; Cynthia Chazotte, MD; Edmund F. Funai, MD; David A. Savitz, PhD*

**OBJECTIVE:** This study sought to identify and analyze neonatal outcomes associated with severe maternal morbidity during delivery hospitalization.

**METHODS:** We used 1995–2003 New York City birth certificates linked to hospital discharge data to identify delivery hospitalizations with maternal diagnosis and procedures that indicated a life-threatening diagnosis or life-saving procedures. We then examined the associations between maternal morbidity and adverse neonatal outcomes.

**RESULTS:** For 1995–2003 there were 982,944 singleton births in New York City, and 4.12 cases of severe maternal morbidity per 1,000 deliveries. Women who suffered from severe morbidity had higher odds of preterm birth less than 37 weeks of gestation (odds ratio [OR], 5.17; 95% confidence interval [CI], 4.82–5.53) and lower mean birth weight (3,296.2 grams compared with 2,893 grams, $P < .001$). Infants delivered to mothers with severe morbidity themselves had higher odds of all adverse outcomes examined. There was a significantly higher odds of cerebral abnormalities, such as IVH (OR, 7.92; 95% CI, 6.19–10.14), seizures (OR, 5.94; 95% CI, 4.41–8), and subdural hemorrhage (OR, 6.04; 95% CI, 3.73–9.79) as well as signs of fetal stress, such as meconium aspiration (OR, 2.38; 95% CI, 1.92–2.96).

**CONCLUSION:** This study shows that neonatal morbidity is disproportionately elevated for those women with severe maternal morbidity during their delivery hospitalization. It is important to understand contributors of life-threatening maternal morbidity in order and be cognizant of the fact that severe maternal morbidity has negative fetal consequences.

**Utilization of Blood Products and Surgical Interventions in Massive Obstetric Hemorrhage**

*Karin A. Fox, MD*
University of Texas Medical Branch, Galveston, Texas

*Julio Mateus, MD; Sanmaan K. Basraon, MD; Ben Byers, MD; Sangeeta Jain, MD*

**OBJECTIVE:** To investigate utilization of treatement modalities for patients with massive obstetric hemorrhage.

**METHODS:** A cross-sectional study of women with obstetric hemorrhage from January 1, 2004 to December 31, 2008. Cases with EBL of of 1,500 mL or greater were identified by records review. Demographics, delivery route, peripartum complications, and management were studied and analyzed using Microsoft Excel 2007 and the SAS System.

**RESULTS:** 154 cases of 17,521 were identified with EBL of 1,500 mL or greater. Subjects were divided into 3 groups: Group I, 58/154 (17.5%; median EBL, 1,650 mL) were managed with medical–surgical therapy alone. Group II, 69/154 (44.8%; median EBL, 2,000 mL), required transfusion with less than 6 units of PRBCs and medical–surgical measures. Group III, 27/154 (37.7%; median EBL, 3,300 mL) received 6 units or more PRBCs, developed DIC or needed ICU admission or both. There were no significant differences in the groups in BMI, gravidity, and parity. Utilization of blood products positively correlates with EBL (Rho = 0.38–0.76), with PRBCs most strongly correlated. Hysterectomy incidence was 25 (16.2%) overall, with 24.1% in group III, 14.9% in group II, and 3.7% in group I. Four patients, all in group III, required ICU admission. One death occured in the setting of massive hemorrhage and DIC.

**CONCLUSION:** Medical and fertility-sparing surgical management is effective for most patients; however, increasing blood loss is associated with increased utilization of transfusion, hysterectomy, ICU admission, and death. Massive hemorrhage is a rare but serious obstetric emergency, requiring judicious management individualized to risk factors and clinical severity.

**Maternal and Fetal Risk Factors Associated With Massive Obstetric Hemorrhage**

*Karin A. Fox, MD*
University of Texas Medical Branch, Galveston, Texas

*Julio Mateus, MD; Sanmaan K. Basraon, MBBS; Ben Byers, MD; Sangeeta Jain, MD*

**OBJECTIVE:** To identify maternal and infant risk factors associated with massive obstetric hemorrhage.

**METHODS:** A retrospective, cross-sectional study of women with peripartum hemorrhage from January 1, 2004 to December 31, 2008. Inclusion criteria were singleton gestation, gestational age (GA) at delivery at or beyond 24 weeks, and estimated blood loss (EBL) 1,500 mL or greater. Maternal and infant characteristics included maternal age, BMI, gravidity, parity, GA at delivery, delivery mode, infant's gender, and birth weight. Selected risk factors were number of previous cesarean deliveries, abnormal placentation, preeclampsia, chorioamnionitis, atony, and abruption. Association between independent variables and the dependent variable (EBL) was analysed using Pearson's correlation test (Fisher's z Transformation, Rho critical value 0.85) and multivariate regression analysis ($P$ <.05).

**RESULTS:** 154 cases of massive hemorrhage were identified from 17,521 total deliveries. 145 met inclusion criteria. Within study factors, placenta previa (r = 0.41), previous cesarean delivery (r = 0.36), gravidity and parity (r = 0.28), placenta accreta (r = 0.21), and mode of delivery (r = 0.17) were positively correlated with the amount of blood loss. Birth weight and delivery GA were negatively correlated (r =-19 and -0.18). Best fit of multivariate regression model included abnormal placentation, previous cesarean deliveries, and delivery mode (F = 12.43, r = 0.5). Chorioamnionitis, abruption, preeclampsia, obesity, and gender did not correlate.

**CONCLUSIONS:** Abnormal placentation, previous cesarean delivery, and delivery mode are significant predictors of massive peripartum hemorrhage. Recognition of these factors may promote measures that aim to reduce morbidity and mortality in this target population.

**Perioperative Outcomes of Resident-Supervised Cesarean Deliveries Versus Those Performed by Private Attendings**

*Stepanida Freeman, MD*
Good Samaritan Hospital, Cincinnati, Ohio

*Vicki L. Dryfhout, MA; Donna Lambers, MD, Matthew A. Barker, MD*

**OBJECTIVE:** To evaluate perioperative outcomes of resident supervised cesarean deliveries versus those performed by a private attending.

**METHODS:** A retrospective cohort study, including a random sample of resident supervised cases (n = 97) and private attending cases (n = 100) were drawn from scheduled cesarean deliveries performed between August 2007 and June 2008. Data regarding demographics, medical history, length of surgery, intraoperative and postoperative outcomes were collected. *t* tests for continuous variables and chi-square tests of association for categorical variables and regression analyses were conducted.

**RESULTS:** Significant differences were noted between patients of teaching service and patients of private service, with respect to patient age (*P* <.001), race (*P* <.001), smoking history (*P* <.001), gravidity (*P* <.05), prior cesarean delivery (*P* <.001), operating time (*P* <.001), estimated blood loss (*P* <.001), lyses of adhesions (*P* <.01), gestational age (*P* <.01), and history of sexually transmitted diseases (*P* <.001).

**CONCLUSION:** Perioperative outcomes of resident-supervised cesarean deliveries versus those performed by a private attending were similar. Although operative time was longer for resident supervised cases, we argue this difference is not clinically significant and may be due in part to resident supervised cases being more complicated.

**Safety of Seprafilm® Use During Cesarean Delivery**

*Victor Hugo Gonzalez-Quintero, MD, MPH*
University of Miami Miller School of Medicine, Miami, Florida

*Jenny Arango-Longo, MD; Torre Halscott, MD; Allison LaBoon, BS; Pam Uharriet, RN, MPH; David Ludwig, PhD*

**OBJECTIVE:** Hyaluronate carboxymethylcellulose adhesion barrier (Seprafilm®) is used to reduce the incidence, extent, and severity of postoperative adhesions in patients undergoing open abdominal or pelvic procedures. The objective of this study is to determine whether the use of Seprafilm® during cesarean delivery (CD) is associated with postpartum infections.

**METHODS:** This is a retrospective cohort study of 1,170 women who underwent CD at a single hospital. Seprafilm® was used during CD in 590 women and excluded in the remaining 580 women. Maternal demographics, total operative time, and length of hospital stay were compared between both groups. Charts of all patients were reviewed for postpartum complications, including abscess, wound infection, wound dehiscence, endometritis, sepsis, cellulitis, foreign body reactions, and wound seromas

**RESULTS:** There were no significant differences in age, body mass index, gestational age, total operative time, blood loss, and length of hospital stay between the two groups. Out of 93 women with at least one postpartum infection, 51 (8.6%) women had Seprafilm® and 42 (7.2%) women did not ($P$ = .375). Multivariate analysis revealed that Seprafilm® does not increase the risk of postpartum infection (odds ratio, 1.21; 95% confidence interval, 0.79–1.85; $P$ = .375)

**CONCLUSION:** The use of Seprafilm® during CD is safe and not associated with postpartum infections.

**Risk Factors and Outcomes of Umbilical Knots**

*Jesus M. Granados, BA*
Univeristy of California, San Francisco, San Francisco, California

*Stephanie J. Handler, BA; Amanda Yeaton-Massey, BA; Geri Ottiviano; Yvonne W. Cheng, MD, MPH; Aaron Caughey, MD, PhD*

**OBJECTIVE:** To investigate the risks and outcomes related to umbilical cord knots.

**STUDY DESIGN:** This is a retrospective cohort study of umbilical cord knots in all women with a singleton gestation who delivered at a single institution (N = 42,184). Outcomes of interest included were IUFD, cesarean delivery, and neonatal acidemia (ph less than 7 or base excess less than -12). The chi-square test was used for univariate analysis, and multivariable analyses were used to control for potential confounders.

**RESULTS:** The overall prevalence of a true knot in the umbilical cord was 0.7% (n = 304). Newborns with an umbilical knot had no difference in IUFD (0.7% versus 0.7%, *P* = .95) as compared with those without a knot. However, they were more frequently found to exhibit acidemia (4.9% versus 2.5%, *P* = .05). Interestingly, there were lower rates of cesarean deliveries of the newborns with an umbilical knot (13.% versus 19.8%, *P* = .004). These findings persisted, controlling for potential confounders (Table).

**CONCLUSION:** Despite prevailing wisdom regarding the risk of stillbirth with an umbilical knot, we did not find such an association. The finding of greater neonatal acidemia speaks to some pathophysiology of gas exchange arising related to the knot; however, this may be primarily during labor and delivery.
Table: Outomes Associated with the Presence of an Umbilical Cord Knot Outcomes aOR 95% CI IUFD 1.67 0.231 - 12.13 Cesarean 0.60 0.36 - 0.98 5 min Apgar <7 1.32 0.84 - 2.09 Acidemia 2.26 1.10 - 4.64

**How Dangerous is a Nuchal Cord?**

*Jesus M. Granados, BA*
University of California, San Francisco, San Francisco, California

*Stephanie J. Handler, BA; Amanda Yeaton-Massey, BA; Aaron Caughey, MD, PhD*

**OBJECTIVE:** To investigate the perinatal outcomes associated with nuchal cord.

**STUDY DESIGN:** This is a retrospective cohort study of nuchal cord in all women with a singleton nonanomlous gestation delivered at a single institution (N = 42,178). Primary outcomes examined included intrauterine fetal death (IUFD), mode of delivery, Apgar scores, and birthweight.

**RESULTS:** Just over 12.6% of the delivered babies had a nuchal cord that, in turn, was not associated with IUFD (Table I). Neonates with a nuchal cord were more likely to be smaller for gestational age compared with those without (8.5% versus 7.2%, *P* = .001). Cesarean delivery rates were lower in neonates with a nuchal cord (9% versus 17.6%, *P* <.001). No difference was seen in Apgar scores.

**CONCLUSION:** Nuchal cord was not associated with IUFD but was associated with a lower cesarean delivery rate. Such findings can be used to reassure the large number of women laboring a fetus with a nuchal cord regarding outcomes. Table 1: Perinatal Outcomes Associated with Nuchal Cord aOR 95% CI IUFD 0.95 0.56 – 1.61 Cesarean 0.49 0.44 – 0.56 SGA 1.22 1.09– 1.39

**The Correlation Between Head Station Assessed by a Noninvasive Imaging Technology and Mode of Delivery**

*Shoshana Haberman, MD, PhD*
Maimonides Medical Center, Brooklyn, New York

*Jacky Nizard, MD; Yves Ville, MD; Ron Gonen, MD; Gonen Ohel, MD; Yoav Paltieli, MD, PhD*

**OBJECTIVES:** To analyze the relation between head station assessed by a noninvasive position-tracking system and an ultrasound-based system, delivery mode and time to delivery.

**METHODS:** Multicenter prospective observational study was performed in three sites (Brooklyn, NY; Haifa, Israel; and Poissy, France) and included 681 head-station measurements performed in 318 singleton, uncomplicated term pregnancies during an active phase of labor. 276 women (86.8%) gave birth vaginaly (normal or assisted) and 42 (13.2%) gave birth by cesarean delivery (primary). 64 women (51.6%) were nulliparus. The LABORPRO system (Trig Medical Inc) allows determination of fetal-head station and position in relation to the pelvic inlet plane and birth canal, using ultrasound imaging and position tracking technology. Pearson correlation, logistic regression, and descriptive statistics were used for the data analysis.

**RESULTS:** The mean time to delivery decreases as head station increases ($P$ <.001). Time to delivery per station in nulliparas was longer when compared with multiparas ($P$ <.005). Once the fetal head is below engagement (station +0.5 and below), the chance for a normal delivery or successful vacuum delivery was 98.4%.

**CONCLUSIONS:** Our results show correlation between objective station determinations done by a noninvasive, ultrasound based method, and the mode of delivery. A predictive model using this technology might provide an objective tool for a decision-making regarding operative delivery.

**Management and Outcome of Twin–Twin Transfusion Syndrome Complicated With Placental Insufficiencies**

*Mounira Habli, MD*
Cincinnati Childrens Medical Center, Cincinnati, Ohio

*Carrie Huber, MD; Foong Yen Lim, MD; William Plozin, MD; Timothy Crombleholme, MD*

**OBJECTIVE:** The aim is to evaluate the management and perinatal outcomes of twin–twin transfusion syndrome (TTTS) complicated with placental insufficiencies (PI) as compared with TTTS without PI.

**STUDY DESIGN:** This is a case control study of all TTTS without PI (control [n = 242]) compared with TTTS with PI (cases [n = 124]) from 2005–2008. Placental insufficiencies is defined as estimated fetal weight (EFW) less than 10%, with elevated head circumference/abdominal circumference ratio and weight discordance greater than 20% or abnormal umbilical-middle cerebral artery waveforms or both. Staging was per Cincinnati staging system. Treatment with laser (SFLP) was reserved for evidence of moderate to severe or worsening recipient cardiomyopathy or failure response to amnioreduction (AR). Data were stratified based on treatment. Variables include: pregnancy outcome, ultrasound, and echocardiographic data. Data were analyzed by chi square or Fisher exact test or *t* test as appropriate.

**RESULTS:** 124 out of 366 (34%) pregnancies met criteria for PI. 8 (6.5%) were treated with expectant management, 14 (11%) AR, 95 (77%) SFLP, and 7 (5.5%) with intrafetal radiofrequency ablation (RFA). Overall, fetal survival was 75 % (185/248). As compared with TTTS without PI, TTTS with PI had a significantly lower donor birthweight and better recipient survival (86% versus 72%, $P < .001$). There was no significant difference in donor survival among both groups. Upon treatment stratification, this significant improvement in recipient survival was persistence in the laser-treated group (88% versus 74%, $P < .001$).

**CONCLUSION:** Twin–twin transfusion syndrome complicated with PI should be treated based on severity of TTTS staging system. Fetoscopic laser improved recipient survival in selected cases with moderate to severe recipient cardiomyopathy.

**The Effect of Bariatric Surgery on Pregnancy Outcomes**

*Nancy W. Hendrix, MD*
Thomas Jefferson University, Philadelphia, Pennsylvania

*Mariangela DiLillo; Susan Weiner, MSN; Vincenzo Berghella, MD*

**OBJECTIVE:** To evaluate whether previous bariatric surgery performed on class II and III obese women as defined by the National Institutes of Health can modify pregnancy outcomes.

**DESIGN:** A retrospective case–control study of women who have undergone bariatric surgery prior to pregnancy. The two control groups used for comparison include class II and III obese women, matched for prebariatric surgery body mass index (BMI) and prepregnancy BMI, who have not undergone bariatric surgery. Mann–Whitney or unpaired *t* test was used, where appropriate; odds ratio (OR) along with 95% confidence intervals (CI) were calculated. *P* <.05 or 95% CI not crossing integer 1 were considered significant.

**RESULTS:** The bariatric group included eight pregestational diabetics taking oral medication or insulin prior to pregnancy and one gestational diabetic. Only two bariatric patients experienced preeclampsia. Two of the infants were macrosomic, while another two were growth restricted. Average blood loss from delivery was 565 mL, while the mothers stayed an average of 4.3 days postpartum. There were no wound complications.

**CONCLUSION:** Women who undergo bariatric surgery as a form of permanent weight loss tend to do better during their pregnancies compared with women who have not undergone bariatric surgery.

**Management of Placenta Accreta: A Survey of Maternal–Fetal Medicine Practitioners**

*Jennifer A. Jolley, MD*
University of California, Irvine, Orange, California

*Michael Nageotte, MD; Deborah A. Wing, MD; Vineet K. Shrivastava, MD*

**OBJECTIVE:** To describe the management strategies for placenta accreta used by Maternal–Fetal Medicine practitioners.

**METHODS:** We conducted a 36-question online survey regarding management of placenta accreta of the Society for Maternal–Fetal Medicine via email and tabulated the results.

**RESULTS:** We had a 29% response rate (508/1,759). Most respondents have been in practice for more than 20 years (30%), at a university-affiliated institution (58.1%). In the previous 2 years, 44.6% of respondents operated on 1–3 cases of placenta accreta, with 3% having operated on greater than 10 cases. Magnetic resonance imaging is used as a diagnostic adjunct when the suspicion for accreta is both low (43%) and high (68%). In asymptomatic patients with high suspicion for accreta, 15.4% of practitioners hospitalize patients antenatally, 34.5% administer corticosteroids, and 46.8% perform amniocentesis for fetal lung maturity prior to scheduled delivery at 36 weeks of gestation (48.4%). Anesthesiology (86.9%) and gynecologic oncology (72.5%) are consulted most preoperatively. Equipment requested prior to delivery includes sequential compression devices (75.0%), intravascular balloon catheters (35.0%), and ureteral stents or catheters (26.2%). With high suspicion for accreta, the majority proceeded with hysterectomy, but 14.3% reported conservative management. The most common method to assess the urinary tract with hysterectomy is palpation of the ureters and inspection of the bladder intraoperatively (58.2%).

**CONCLUSIONS:** The majority of survey respondents manage the delivery of patients with placenta accreta primarily. Multiple management styles exist, and practices vary. Further study may lead to consensus strategies to improve outcome in this high-risk obstetric condition.

**Operative Morbidity Associated With Cesarean Delivery in Patients Undergoing Highly Active Antiretroviral Treatment**

*Johannes Jones, MD*
The Brooklyn Hospital Center, Brooklyn, New York

*Sabina Cherian, MD; Robert R. Robertazzi, MS; Aroti, BS*

**OBJECTIVE:** The risk–benefit ratio of elective cesarean delivery for human immunodeficiency virus (HIV)-infected women in the advent of highly active antiretroviral treatment (HAART) remains unclear. The present study compared morbidity associated with cesarean delivery between HIV seropositive women undergoing HAART with that of a similar group not receiving treatment prior to labor.

**METHODS:** In a series of 81 HIV seropositive women who underwent cesarean delivery, 57 were undergoing HAART, 17 were not on antiretroviral therapy, and 7 received ZDV either alone or in combination with adjuncts. Maternal and fetal complications were stratified by duration of HIV, CD4 lymphocyte count ($10^6$/L), and viral load prior to cesarean delivery.

**RESULTS:** Median duration of identified HIV infection was 3 years ranging to 15 years. Nontreatment mean CD4 was 428.2 ± 193.8, while HAART and ZDV groups were 482 ± 269 and 255 ± 188, respectively *(NS, P* = .201*).* Overall morbidity was 17.3%; 21% for HAART, 11.8% in nontreatment, and none in the ZDV group *(NS, P* = .318*).* Complications by serum viral load, CD4 count, or HIV duration were not significant. Women HIV positive less than 3 years had proportionately higher morbidity (4/9), albeit nonstatistical *(P* = .098*)*. Fetal complications between groups were not significant. No other significant outcomes were observed.

**CONCLUSION:** Seropositive women can undergo cesarean delivery, within acceptable risk of postpartum complications under current standards of care. Higher morbidities observed in immunocompromised HAART patients may suggest that antiretroviral therapy itself may be a factor.

**Influence of the New Weight Gain Guidelines on Pregnancy Outcomes in Obese Women**

*Brett Einerson, MS*
Wake Forest University School of Medicine, Winston Salem, North Carolina

*Josephine Huffman, MD; Cheryl Desch, MS, RN; Saju Joy, MD, MPH*

**OBJECTIVE:** The Institute of Medicine has recently modified their pregnancy weight gain guidelines based on prepregnancy body mass index (PPBMI), recommending pregnancy weight gain of 11–20 lb for obese women. We compared adverse pregnancy outcomes between obese women gaining 25–35 lb versus 11–20lbs.

**METHODS:** Patients with singleton term deliveries (37 weeks of gestation or greater) and PPBMI 30 or greater who gained between 25–35 lb and 11–20 lb were identified from a database. Included were those without history of cardiovascular disease or diabetes mellitus and without pregnancy-related hypertension (PRH) or gestational diabetes mellitus (GDM) at enrollment. Select pregnancy outcomes were compared between women gaining 25–35 lb (n = 327) and those gaining between 11–20 lb (n = 364).

**RESULTS:** Data from 691 women were analyzed. No differences were found between the groups for available pregnancy outcomes.

| | **Weight Gain of 25–35 lb** (n = 327) | **Weight Gain of 11–20 lb** (n = 364) | ***P*** |
|---|---|---|---|
| **Indicated delivery** | 53.8% | 53.6% | .947 |
| **Cesarean delivery** | 44.3% | 39.3% | .178 |
| **Neonatal intensive care unit admission** | 5.2% | 6% | .631 |
| **Low birth weight** | 5.8% | 4.4% | .397 |
| **Macrosomia** | 7.6% | 6% | .404 |
| **Developed gestational diabetes mellitus** | 8.6% | 9.9% | .548 |
| **Developed pregnancy-related hypertension** | 15% | 11.5% | .181 |

**CONCLUSION:** In the present analysis we did not show a statistical difference in pregnancy outcomes between weight gain groups, although larger sample size is needed to assess the potential influence on lowered cesarean delivery rates and PRH development. Education and ongoing support of obese women regarding healthy diet, exercise, and pregnancy weight gain goals should begin preconception and continue throughout pregnancy.

**Pregnancy Weight Gain in the Obese Gravida: Maternal and Neonatal Outcomes**

*Saju Joy, MD, MPH*
Wake Forest University School of Medicine, Winston-Salem, North Carolina

*Josephine Huffman, MD Brett Einerson, MS, Ryan A. Stone, MD, Niki Istwan, RN, Cheryl Desch, MS, RN*

**OBJECTIVE:** The Institute of Medicine recommends weight gain of 11–20lbs for obese women. We compared adverse pregnancy outcomes between obese women whose weight gain was outside of this range.

**METHODS:** Obese women (prepregnancy body mass index [BMI] of 30 or greater) having singleton term deliveries (at 37 weeks of gestation or greater) and pregnancy weight gain of greater than 35 lb ( n =272), 0–10 lb (n = 274), or weight loss (n = 262) were identified from a database. Excluded were women with history of cardiovascular disease, diabetes mellitus, pregnancy-related hypertension (PRH), or gestational diabetes diabetes mellitus (GDM) at enrollment. Pregnancy outcomes were compared among the three groups.

**RESULTS:** Weight gain or loss outside of guidelines did not influence rates of low birth weight, neonatal intensive care unit admission, or GDM development. Significant factors are presented in the table. [1]=adjusted *P* <.05 versus weight-loss group, [2]=adjusted *P* <.05 versus 0–10lb group. BW=birth weight.

| | **Weight Loss (n = 262)** | **0–10 lb (n = 274)** | **Greater Than 35 lb (n = 272)** | ***P*** |
|---|---|---|---|---|
| **Weight change** | -12 (-50, -1) | 5.5 (0, 10) [1] | 45 (36, 105) [1, 2] | <.001 |
| **Infant BW** | 3,158 ± 489 | 3,238 ± 443 | 3,391 ± 477 [1, 2] | <.001 |
| **Macrosomia** | 4.2% | 3.3% | 10.3% [1, 2] | .001 |
| **Cesarean delivery** | 31.7% | 43.1% [1] | 47.1% [1] | .001 |
| **Developed pregnancy-related hypertension** | 10.3% | 10.9% | 21.3% [1, 2] | <.001 |

**CONCLUSION:** These data demonstrate that pregnancy outcomes may improve in the obese gravida with less than the recommended weight gain. Studies addressing weight gain in the obese gravida should be pursued in addition to continued education and ongoing support for obese women regarding healthy diet and exercise.

**Epidural Anesthesia during Labor, Myths and Realities: Patient Perception and Experience**

*Angela D. Kerr, MD*
The Brooklyn Hospital Center, Brooklyn, New York

*Shala Salem, MD; Robert R. Robertazzi, MS; Judy Fong, BS*

**OBJECTIVE:** Preconceptions about epidural often influence patient choices regarding pain relief during labor. The present study was an assessment of their beliefs, attitudes, and subsequent experience regarding epidural during labor and delivery.

**METHODS:** Women who had received epidural during childbirth (N = 20) participated in a predischarge survey, concerning held views on epidural and factors influencing its selection. Questions referenced education, ethnicity, previous procedures requiring analgesia, familial support, pain experienced (scale of 1–10) and overall satisfaction with pain relief.

**RESULTS:** Knowledge regarding epidural was mostly anecdotal, with 75% of women knowing someone who had undergone epidural, 75% of which were positive experiences. Previous procedures requiring analgesia were experienced by 50%, and 75% had at least 2 previous vaginal deliveries, with 45% receiving epidural. Back pain, headache, and fear of paralysis were the most common concerns regarding epidural. Pain (65%) and physician recommendation (25%) were the most influential factors for choosing epidural. Regarding patient experience, 45% reported mild to moderate pain following epidural. Back pain was the most common (35%) antipartum complaint, with apprehension of latent paralysis (20%). Three quarters were satisfied with epidural, opting for the procedure again. Dissatisfied patients cited postoperative back pain (5%) and insufficient pain relief (10%). African-American women (66%) experienced slightly greater moderate pain (3–4 category), than Hispanic patients (43%), $P = .01$. No other statistical differences were noted among ethnic groups.

**CONCLUSION:** The overall experience regarding epidural was favorable, with approximately one third of each rating their epidural as either fair, good or excellent.

**Pregnancy Outcome of Patients Without Criteria for Gestational Diabetes Mellitus but With Abnormal 100-gm Oral Glucose Tolerance Test Results**

*Anna S. Leung, MD*
Pomona Valley Hospital, Pomona, California

*Sharon Lane, RN; Karina Yu*

**OBJECTIVE:** To ascertain whether pregnant patients who have an abnormal 100-g oral glucose tolerance test result without criteria for mild gestational diabetes mellitus require medical therapy

**STUDY DESIGN:** Patients who underwent 100-g oral glucose tolerance test with normal fasting glucose levels below 95 mg/dL but one abnormal value of three timed glucose measurements that exceeded established thresholds: 1-hour, 180 mg/dL; 2-hour, 155 mg/dL; and 3-hour, 140 mg/dL were referred to High Risk Obstetrical Unit and Comprehensive Diabetic Educational Program (Sweet Success).

**RESULTS:** During the study period, 14 of such patients were evaluated and followed. Sixty-four percent (9 of 14) of them eventually required both dietary therapy and glyburide to maintain fasting glucose and 1-hour postprandial glucose of less than 95 and 130 mg/dL, respectively. The mean gestational age at diagnosis of abnormal glucose tolerance test was 22.9 weeks, with mean observation time prior to glyburide therapy of 7.7 weeks. Patients gave birth at a mean gestational age of 38.2 weeks, with a mean birthweight of 3,109 g. There were no perinatal deaths, birthweight greater than 4,000 g, or large-for-gestational-age infants.

**CONCLUSION:** Sixty-four percent of patients who had abnormal 100-g oral glucose tolerance test results without criteria for mild gestational diabetes mellitus eventually require medical therapy for control of elevated glucose. No adverse perinatal outcome was seen.

**Do Patients With Gestational Diabetes Mellitus Return for Postpartum Screening?**

*Anna S. Leung, MD*
Pomona Valley Hospital Medical Center, Pomona, California

*Laura Smith, RN; Garrett K Yu*

**OBJECTIVE:** To study whether women with previous gestational diabetes mellitus return for the recommended 2-hour oral glucose tolerance test at 6–12 weeks postpartum

**STUDY DESIGN:** Gestational diabetic patients who attended the High Risk Obstetrical Unit and Comprehensive Diabetic Educational Program (Sweet Success) were evaluated for their compliance in the 6–12 week postpartum 2-hour oral glucose tolerance test.

**RESULTS:** During the study period, only 5 of the 51 patients (9.8%) returned for the 6–12 week postpartum 2-hour glucose tolerance test. Despite intensive antenatal diabetic teaching and numerous phone messages, 46 of them (90.2%) did not return for the recommended screening test. There was no statistical significance difference in the socioeconomic status (governmental versus privately insured: 56.5 % versus 43.5 %) and attained educational level (elementary school versus high school versus college graduate: 26.1 % versus 39.1% versus 34.8%) among the nonresponders. Most of these patients (78%) were compliant with their weekly prenatal visits for evaluation of diabetes mellitus. In addition, 14 of them (30.4%) had been followed in the High Risk Obstetrical Unit since the first and second trimesters. Eighty two percent (33/46) of the patients that failed postpartum diabetic screening required both dietary and medical (glyburide or insulin) therapy prior to delivery.

**CONCLUSION:** Compliant gestational diabetic patients requiring medical therapy antenally failed to return for postpartum for 2-hour oral glucose tolerance tests at 6–12 weeks postpartum.

**Knowledge and Use of Folic Acid in Kansas**

*Emily R. Linklater, BS*
Kansas City University of Medicine and Biosciences, Kansas City, Missouri

*Niaman Nazir, MBBS, MPH; Won S. Choi, PhD; V. James Guillory, DO, MPH, FACPM*

**OBJECTIVE:** Taking folic acid daily, before and during early pregnancy, reduces neural tube birth defects. Unfortunately, many women fail to take it daily as recommended. This study assesses women's knowledge and use of folic acid.

**METHODS:** Data were collected from 8,304 participants in Kansas using the 2006 Behavioral Risk Factor Surveillance Survey. SUDAAN was used to determine the associations between maternal characteristics, knowledge, and use of folic acid, using chi-square and multiple logistic regression.

**RESULTS:** Sixty-six percent of childbearing-age women were aware of the USPHS recommendation to take folic acid daily to prevent birth defects, and 65% took a daily multivitamin; however, only 27% reported taking folic acid daily. Women 25–34 years old, married or in a relationship (*P* <.0001), white (*P* = .008), or pregnant (*P* = .028) were more likely to be aware of the recommendation. Women 35 years or older, with any college education, with healthcare coverage, who were capable of pregnancy or were pregnant (*P* <.0001), who were white (*P* = .0013), or with income greater than $25,000 (*P* = .0004), were more likely to take vitamins. However, only pregnancy was associated with daily vitamin use (*P* = .0006). Multiple logistic regression indicated women who were married or in a relationship (adjusted odds ratio [AOR], 2.17; 95% confidence interval [CI], 1.23–3.79) and women 25–34 years of age, (AOR, 2.66; 95% CI, 1.18–5.97) were more likely to be aware that folic acid reduces birth defects, but nonwhite women were less likely to possess this knowledge (AOR, 0.33; 95% CI, 0.18–0.60).

**CONCLUSION:** Folic acid education targeted at single, non-white, lower-SES should be considered.

**Presidential Voting Pattern and Perinatal Mortality in Wisconsin, 2004: A Pilot Study**

*Erin M. Marra, BS*
Aurora Sinai Medical Center, Milwaukee, Wisconsin

*Suneet P. Chauhan, MD; Han Y. Chen, MS; Nancy W. Hendrix, MD; Everett F. Magann, MD; John C. Morrison, MD*

**OBJECTIVE:** The purpose was to determine if there is a differential rate of perinatal or infant mortality (PIM) in Wisconsin counties where the majority voted for a democratic versus republican presidential candidate in 2004.

**METHODS:** From the Wisconsin Department of Health, we obtained the annual PIM report. The data on presidential voting in Wisconsin for the 2004 election was acquired from the Washington Post web site. Morality is presented per 1,000 births. Odds ratios (OR) and 95% confidence intervals (CI) were calculated.

**RESULTS:** In 2004, of the 72 counties in Wisconsin, the majority voted for the democratic candidate in 37% and for republican in 63%. The total number of births was 70,131; 48% of deliveries occurred in democratic counties, and 52% in republican counties. The fetal death rate in the democratic counties was significantly higher than in republican counties (5.9 versus 4.2; OR, 1.40; 95% CI, 1.14–1.74) but not the neonatal death rate (4.4 versus 3.6; OR, 1.23; 95% CI, 0.97–1.56). The postneonatal mortality rate (2.5 versus 1.5; OR, 1.70; 95% CI, 1.21–2.39) and infant mortality rate (6.9 versus 5.1; OR, 1.37; 95% CI, 1.13– 1.66) were significantly higher for democratic counties. The PIM was also significantly higher for democratic counties than republican counties (12.8 versus 9.2; OR, 1.39; 95% CI, 1.20–1.60).

**CONCLUSIONS:** Undeniably, the voting pattern in a presidential election does not cause the differential rate of PIM in various counties, but it may be a marker for perinatal morbidity and allow providers to better disperse resources.

**Trial of Labor in the Diabetic Gravida: Success Rates and Outcomes**

*Dimitrios S. Mastrogiannis, MD, PhD, MBA*
Temple University School of Medicine, Philadelphia, Pennsylvania

*Madelyn Gonzales, MD; Neetu Jain, MPH; Vani Dandolu, MD, MPH*

**INTRODUCTION:** Cesarean delivery (CD) rates have been steadily increasing with a concomitant decrease in vaginal birth after cesarean (VBAC) at the same period of time Safety concerns have been among the driving forces for this decline. Failed trial of labor (TOL) is associated with a high risk of maternal morbidity (uterine rupture, maternal transfusion, cesarean hysterectomy) and perinatal morbidity and mortality. Success rates in pregnant patients with diabetes have not being adequately studied.

**OBJECTIVE:** To examine VBAC success rates in pregnant diabetics from a large dataset.

**MATERIALS AND METHODS:** The data was obtained from a New Jersey perinatal dataset for the years 1997–2005. The database included 1,004,116 pregnancies. The subgroup of interest was those women with diabetes and a history of one previous cesarean delivery compared with nondiabetics. These women were then categorized into those electing repeat cesarean delivery at the current pregnancy versus those attempting trial of labor.

**RESULT:** Presented in table 1 and 2.

**TABLE 1**

| | **Diabetics** | **Nondiabetics** | |
|---|---|---|---|
| | **n = 11,217** | **n = 126,726** | **Odds Ratio (Confidence Interval)** |
| **Maternal age (standard deviation)** | 33.1 years (4.97 years) | 31.5 years (5.36 years) | 1.05 (1.05–1.06) |
| **Gestational age (standard deviation)** | 38 weeks (1.87 weeks) | 38.5 years (1.86 years) | 0.78 (0.77–0.79) |
| **Birth weight (standard deviation)** | 3,473.4 gm (648.6) | 3,372 gm (571.6 gm) | 1.001 (1.001–1.001) |
| **Elective cesarean delivery without trial of labor** | 72.98% | 63.9% | |
| **Attempted trial of labor** | 27.1% | 36.1% | 0.75 (0.71–0.78) |
| **Failed vaginal birth after cesarean delivery** | 48% | 37.30% | 0.846 (0.798–0.897) |

| TABLE 2 | | |
|---|---|---|
| | **Diabetic Versus Nondiabetic Vaginal Birth After Cesarean (Adjusted Odds Ratio)** | **Diabetic Versus Nondiabetic Failed Vaginal Birth After Cesarean (Adjusted Odds Ratio)** |
| **Neonatal intensive care unit admissions** | 1.98 (1.69, 2.33) | 2.41 (2.05,2.83) |
| **Shoulder dystocia** | 1.60 (1.08,2.39) | |

**CONCLUSION:** Diabetic pregnant patients have a lower VBAC success rates and higher complication rates than nondiabetics.

**Effects of a Verbal Summary in Improving Maternal Recall in Postpartum Women**

*Margaret M. McElhinney, BS*
Loyola University Stritich School of Medicine, Chicago, Illinois

*Kimberly Kenton, MD; Linda Brubaker, MD*

**OBJECTIVE:** The purpose of this study was to determine if a verbal summary would improve immediate postpartum maternal recollection of important birth events.

**METHODS:** In this International Review Board-approved, randomized trial, we randomized participants into intervention and control (usual care) groups. All participants received normal obstetric care as per their obstetric provider in a tertiary care university hospital. Women in the intervention group received a verbal summary based on the documented events in their medical records. Prior to hospital discharge, but more than 12 hours after their delivery, all participants were asked to complete a brief questionnaire about their major birth events. The gold standard for correct answers was the patient's medical records. We compared the proportion of women in each group with perfect recall (zero wrong answers) and those with greater than three wrong answers. The analysis was restricted to data from participants who completed their questionnaire.

**RESULTS:** Seventy-seven of the 91 randomized participants completed the questionnaire, with 37 assigned to the intervention group and 40 to the control group. Eight of the remaining 14 women were originally assigned to the intervention group. More women in the intervention group had perfect recall (22% versus 5%, $P = .03$). Fewer women in the intervention group had more than three wrong answers (13% versus 35%, $P = .03$).

**CONCLUSION:** A brief verbal summary of major birth events improves immediate postpartum recall of these events. Certain birth data, such as infant weight, type of delivery or perineal lacerations are rarely recalled in error shortly following birth.

**A New Interdisciplinary Model for the Identification and Treatment of Postpartum Depression**

*Samantha E. Meltzer-Brody, MD, MPH*
University of North Carolina, Chapel Hill, North Carolina

*David Rubinow, MD; Kate Menard, MD, MPH; Robert Strauss, MD; John Thorp, MD; Daniel Clarke-Pearson, MD*

**BACKGROUND:** Perinatal depression (during pregnancy and up to 6 months postpartum), has a prevalence of at least 10%, and is often undiagnosed and untreated. In 2004, the UNC Departments of Psychiatry and Obstetrics and Gynecology established an integrated Perinatal Psychiatry Program to increase awareness and provide specialized psychiatric care for perinatal depression. This partnership led to the subsequent implementation of universal screening for perinatal depression at all ob-gyn 6-week postpartum visits using the Edinburgh Postnatal Depression Scale (EPDS).

**OBJECTIVE:** In order to meet the increased clinical demand for specialized perinatal psychiatric care generated by universal screening, we developed an interdisciplinary approach for treatment.

**METHODS:** Multiple types of perinatal mental health services were created expanded, including the addition of multiple outpatient perinatal clinic sites, integration of a dual trained Women's health/ Psychiatric Nurse Practitioner into the og-gyn clinics, creation of a bimonthly free perinatal support group, coordinated services with lactation consultants, midwives, social workers, and NICU staff and the opening of the first US Inpatient Perinatal Psychiatric Unit to provide specialized care to the most severely ill patients.

**RESULTS:** Several important key elements have been identified and data will be presented demonstrating the success of this program.

**CONCLUSION:** The growth and success of this integrated treatment model for perinatal depression strongly suggests that it is both greatly needed and exportable to other clinical arenas. Routine screening for perinatal depression identifies a large number of women requiring mental health care. Increased awareness and accessible specialized treatment improves outcomes.

**A Perinatal Rapid Response Team: A Preemptive Team Approach to Improved Patient Safety and Liability**

*Joseph C.L. Merola, MD, MPH*
St. Luke's Hospital and Health Network, Bethlehem, Pennsylvania

*Peter A. Robson, MD; Kathy Nunemacher, BSN, RN, CPN; James N. Anasti, MD*

**OBJECTIVE:** The Adult Rapid Response Team has been a general medical model that reduced crisis events through early, subacute intervention. Created here was a similar clinical obstetric team responding to ominous and contentious perinatal settings, thus avoiding adverse outcomes and potentially reducing obstetric liability.

**METHODS:** The Perinatal Rapid Response Team (PERRT) included the patient and family, nurse, clinical coordinator, resident physician, laborist, and attending physician (on site). Consultation with the anesthesiologist, neonatologist, and perinatologist occurred as needed.

Triggers causing the PERRT to respond included anyone's discomfort or uncertainty with the care process; disagreement between the birth plan and boundaries; lack of clarity regarding vital signs, bleeding, or fetal surveillance; or the need for midpelvic delivery.

Following the PERRT summons, on-site discussion and communication with consultants and family occurred. Action plans included observation, adjustments in fetal surveiallance, oxytocin or medication changes, intrauterine resuscitation, and recommendations for delivery.

**RESULTS:** Desirable reduction measures, in about 7,000 deliveries, were neonatal intensive care unit admissions at greater than or equal to 37 weeks of gestation, neonatal APGAR scores less than 6 at 5 minutes, and emergency cesarean delivery (less than 30 minutes) (Table 1).

**CONCLUSION:** While no direct cause and effect relationship can be drawn, during the intial 1 1/2 years of the PERRT experience, its presence was temporally associated with a reduced number of measured adverse perinatal events and an improved culture of safety.

**Table 1**

| Measure | Pre-PERRT | December 2007–December 2008 | January 2009–June 2009 |
|---|---|---|---|
| **Emergency Cesarean Delivery** | **26.8%** | **18.5%** | **11.9%** |
| **Low APGAR score** | **6.8%** | **5.3%** | **3.2%** |
| **Neonatal intensive care unit admission** | **53.5%** | **48%** | **51.6%** |

**External Cephalic Version Is More Successful in African-American Women**

*Geri L. Ottaviano, BA*
University of California San Francisco, San Francisco, California

*Clara Ward, MD; Stephanie J. Handler, BA; Jesus M. Granados, BA; Yvonne W. Cheng, MD, MPH; Aaron B. Caughey, MD, PhD*

**OBJECTIVE:** To investigate the differences in outcomes of external cephalic version (ECV) between different racial–ethnic groups.

**STUDY DESIGN:** This is a retrospective cohort study of all women who underwent a trial of ECV (N = 246). The primary outcome was a successful version from breech to cephalic. We examined race–ethnicity as a predictor of success, and we controlled for potential confounders in a multivariable model.

**RESULTS:** We found that success of ECV varied by race–ethnicity: 34.0% in caucasians, 39.1% in Latinas, and 34.9% in Asians as compared with 64.7% in African Americans, (*P* = .01). When controlling for potential confounders, the increased success seen in African Americans persisted (adjusted odds ratio [AOR], 3.8; 95% confidence interval [CI], 1.1–13.4), as did the decreased success in nulliparous women of all races–ethnicities (AOR, 0.37; 95% CI, 0.2–0.7) (Table 1).

**CONCLUSIONS:** Race–ethnicity is significantly associated with success of ECV; African American women experience success at a significantly higher rate than other racial–ethnic groups. The etiology of this difference is unclear, but potentially, differences in birthweight may explain some of the association, although including birthweight in the model did not eliminate the effect seen in African Americans. These results identify a population in which an attempt at ECV should be strongly encouraged and can be used in counseling.

Table 1. Predictors of Success of External Cephalic Version

**Does the Type of Uterine Incision at Time of Preterm Birth Affect Perinatal Outcomes?**

*Bhuvan Pathak, MD*
University of Southern California, Keck School of Medicine, Los Angeles, California

*Lili Shamsnia; Neisha Opper; David Miller, MD; Joseph Ouzounian, MD; Richard Lee, MD*

**OBJECTIVE:** To determine if vertical uterine incision in preterm cesarean deliveries is associated with improved neonatal or maternal outcomes or both.

**METHODS:** All cesarean deliveries of liveborn, singleton infants of 24–30 weeks gestation and birthweight * 500 g were selected from the comprehensive perinatal database at LAC+USC Medical Center. Deliveries of infants with congenital anomalies and records with missing type of incision information were excluded. Primary outcomes analyzed were estimated blood loss (EBL) and 5-minute Apgar score. Data were analyzed using independent *t* tests, Wilcoxon Sum Rank tests and logistic regression analysis.

**RESULTS:** During the period covered by the database, 29,407 infants were delivered and 310 met inclusion criteria. Of these, 40% (123) were delivered via low transverse incision and 60% (187) were delivered via vertical incision. Median Apgar score at 5 minutes was higher in infants delivered by low transverse incision compared with those delivered by vertical incision (8 [7–8] versus 7 [6–8], *P* = .0001). After adjusting for estimated gestational age, infants delivered by low transverse incision were two times more likely to have a 5-minute Apgar score of * 7 (95% confidence interval [CI], 1.21–3.32; *P* = .0072). No statistically significant association between type of incision and EBL was found (*P* = .2).

**CONCLUSION:** These data suggest that vertical incision is not associated with improved neonatal outcome, as measured by 5-minute Apgar score, or maternal outcome, as measured by EBL. Study of other outcome measures is needed to determine if vertical incision in preterm delivery is associated with other neonatal or maternal health benefits.

**Adolescent Pregnancies: Minority Racial–Ethnic Groups Have Decreased Rates of Obstetric Complications**

*Christina A. Penfield*
University of California San Francisco, San Francisco, California

*Mariam Naqvi, MD; Yvonne W. Cheng, MD, MPH; Amanda Yeaton-Massey, MD; Aaron B. Caughey, MD, PhD*

**OBJECTIVE:** To examine obstetric outcomes for adolescents among the four major racial–ethnic groups.

**METHODS:** This is a retrospective cohort study of singleton births to nulliparous women aged 12–19 year at UCSF. The prevalence of preterm birth, cesarean delivery, preeclampsia, and gestational diabetes were compared across African-American, Asian, Latina, and white racial–ethnic groups. Analyses were conducted using chi-squared tests and multivariable logistic regression analyses with White as the referent group.

**RESULTS:** African-American and Asian adolescents have lower rates of cesarean delivery and gestational diabetes compared with whites, and African Americans and Latinas have lower rates of preterm birth. Our data suggest lower rates of preeclampsia in African Americans and Asians but this did not reach statistical significance.

| Adverse Obstetric Outcomes | White<br>AOR | African American<br>AOR<br>(95% CI) | Asian<br>AOR<br>(95% CI) | Latina<br>AOR<br>(95% CI) | P Value<br>AOR<br>(95% CI) |
|---|---|---|---|---|---|
| Preterm Birth (<37 weeks) | 1.00 | 0.57<br>(0.35 - 0.95) | 0.75<br>(0.40 - 1.39) | 0.52<br>(0.30 - 0.91) | 0.004 |
| Cesarean Delivery | 1.00 | 0.48<br>(0.32 - 0.73) | 0.44<br>(0.25 - 0.73) | 0.74<br>(0.47 - 1.13) | <0.001 |
| Preeclampsia | 1.00 | 0.88<br>(0.55 - 1.41) | 0.63<br>(0.34 - 1.14) | 1.02<br>(0.62 - 1.71) | <0.001 |
| Gestational Diabetes | 1.00 | 0.13<br>(0.02 - 0.69) | 0.70<br>(0.17 - 2.89) | 0.95<br>(0.31 - 2.97) | <0.001 |

**Table I. Adjusted Odds Ratios of Adolescent Birth Outcomes**

**CONCLUSION:** Asian American, African-American, and Latina adolescents have a decreased risk of obstetric complications when compared with white adolescents. Possible factors that account for these differences include sociodemographic features, such as level of social support and stress for the pregnant adolescent. There may also be a biological basis for these differences, such as unequal rates of gynecologic maturity.

**Prevention of Excessive Pregnancy Weight Gain Through Patient Education and Provider Counseling**

*Rosanne Di Pietrantonio, BA*
Northwestern University Feinberg School of Medicine, Chicago, Illinois

*Elizabeth Buchert, MD; Joseph Feinglass, PhD; Melissa Simon, MD, MPH*

**OBJECTIVE:** The purpose of this study is to develop an intervention to help women meet their weight gain goals during pregnancy as well as improve provider counseling through simple additions to the medical record, including graphs and provider checklists.

**METHODS:** Pregnant women were recruited from a hospital-based clinic that serves women who are uninsured or receiving public aid. Historical controls were obtained prior to the study. Intervention participants received an educational pamphlet at their first prenatal visit with nutrition, exercise, weight gain guidelines, and risks of excess weight gain information. At follow-up visits, provider counseling was encouraged via a weight-gain trend graph and targeted feedback checklist in the patient chart. The primary outcome was the total weight gained throughout prenatal care. Secondary outcomes included shifts in participant and provider knowledge and attitudes, as assessed by questionnaires.

**RESULTS:** We analyzed 57 participants and 109 controls with similar demographic composition. Patients in the intervention group and routine care group gained similar weight ($P$ = .71). After controlling for other factors through linear regression analysis, the intervention was associated with 4.6 lb lower follow-up weight ($P$ = .029), and participants who received the intervention were 34% as likely to gain weight exceeding Institute of Medicine guidelines ($P$ = .009).

**CONCLUSION:** This pilot prenatal care obesity prevention project was associated with lower weight gain in pregnancy. The feedback checklist, weight gain graph, and educational pamphlet on maternal weight gain proved to be favorable components of this project and merit further examination in a larger intervention trial.

**Change in Modified Bishop Score as a Predictor of Cesarean Delivery Rate After Cervical Ripening**

*Prasad Gawade, MBBS*
University of Massachusetts at Amherst, Amherst, Massachusetts

*Glenn Markenson, MD; Fadi Bsat, MD; Andrew Healy, MD; Brian Whitcomb, MD; Michael Plevyak, MD*

**OBJECTIVE:** To determine if a change in the modified Bishop score from unfavorable to favorable after cervical ripening is associated with a decreased cesarean delivery (CD) rate after induction.

**METHODS:** Retrospective cohort study of 2,059 consecutive term patients from May 2005 to June 2009 admitted for cervical ripening with a modified Bishop score less than 6. Modified Bishop score was defined as the sum of effacement, station and twice the cervical dilatation scores. We excluded multiple gestation, malpresentation, planned or prior CD, or stillbirth. Maternal and obstetric characteristics were examined as predictors of CD, using multivariate logistic regression analysis.

**RESULTS:** A modified Bishop score less than or equal to 5 at the time of oxytocin initiation following cervical ripening was associated with an increased CD risk (adjusted odds ratio [AOR], 1.76; 95% confidence interval [CI], 1.31–2.38). This increase was significant for nulliparous women (AOR, 1.97; 95% CI, 1.42–2.74) but not multiparous women (AOR, 0.85; 95% CI, 0.44–1.62). Other factors associated with an increased CD risk included a unit increase in maternal age (AOR, 1.07; 95% CI, 1.04–1.09) and prepregnancy body mass index (AOR, 1.08; 95% CI, 1.06–1.09), every 5-kg increase in gestational weight (AOR, 1.11; 95% CI, 1.02–1.20), gestational age greater than 40 weeks (AOR, 1.87; 95% CI, 1.47–2.43), birth weight less than 2,500g (AOR, 2.29; 95% CI, 1.18–4.47), and more than 4,000 g (AOR, 1.48; 95% CI, 1.02–2.14), nulliparity (AOR, 11.06; 95% CI, 8.14–15.04), male infant (AOR, 1.59; 95% CI, 1.25–2.03), no epidural (AOR, 1.53; 95% CI, 1.20–1.94), and unmarried status (AOR, 1.59; 95% CI, 1.20–2.10).

**CONCLUSION:** Failure to achieve a favorable modified Bishop score after cervical ripening is associated with an increased CD rate in nulliparous, but not multiparous, women undergoing labor induction.

**Comparison of Bishop Score With Modified Bishop Score to Predict Cesarean Delivery After Induction**

*Prasad Gawade, MBBS*
University of Massachusetts, Amherst, Massachusetts, Amherst, Massachusetts

*Glenn Markenson, MD; Fadi Bsat, MD; Andrew Healy, MD; Brian Whitcomb, PhD; Michael Plevyak, MD*

**OBJECTIVE:** To compare Bishop score and modified Bishop score in the prediction of cesarean delivery (CD) after induction of labor (IOL).

**METHODS:** Consecutive term patients from May 2005 to June 2009 admitted for IOL with all five components of the Bishop score at admission were evaluated retrospectively. We excluded multiple gestation, malpresentation, planned or prior CD, or stillbirth. Modified Bishop score was defined as the sum of effacement, station, and twice the cervical dilatation scores. Predictors of CD were evaluated using multivariate logistic regression. Bishop score´s ability to predict CD was compared with that of the modified Bishop score by nonparametric comparison of the area under the curve (AUC) of their receiver operating characteristic (ROC) curves (± SE).

**RESULTS:** In unadjusted ROC curves Bishop scores less than 6 (sensitivity 69.6 %, specificity 48.1 %, AUC 0.59) had similar overall predictive ability as modified Bishop scores less than 6 (sensitivity 81%, specificity 37.5%, AUC 0.59). Adjusting for maternal age, race, parity, gestational age, prepregnancy body mass index, gestational weight gain, gestational diabetes mellitus, marital status, infant birth weight and gender, both Bishop scores less than 6 (adjusted odds ratio [AOR], 1.94; 95% confidence interval [CI], 1.53–2.44) and modified Bishop scores less than 6 (AOR, 2.28; CI, 1.75–2.97) on admission had an increased CD risk. The ability of the Bishop score to predict CD (AUC=0.814±0.01) was not significantly different (*P* = 0.87) from the modified score (AUC=0.815±0.01).

**CONCLUSION:** In a risk prediction model, replacing the Bishop score with modified score does not significantly alter the discriminative power, potentially simplifying clinical assessment of women undergoing IOL.

**Initiation of an Obstetricl Rapid–Response Team: Effects on Emergent Cesarean Deliveries**

*Orlando M. Ramirez, MD*
Mount Sinai School of Medicine - Jersey City Medical Center, Jersey City, New Jersey

*Eunji Seward, MD; Carol L. Gagliardi, MD*

**OBJECTIVE:** To determine the efficacy of a centrally-activated obstetric rapid-response team (OB-RRT) on emergent cesarean deliveries.

**METHODS:** A retrospective chart review of emergency cesarean deliveries for 6 months prior to institution of OB-RRT, (Control-Group 1), and the first 12 months after use of OB-RRT (Group 2) was performed. Outcome measures included neonatal disposition, decision-to-incision time, and incision-to-delivery time. Neonatal disposition was limited to term infants (37 weeks of gestation or greater), removing the effect of prematurity. Data were evaluated by unpaired *t* test, or chi square, with significance of $P < .05$.

**RESULTS:** In Group 1 (Control), there were 35 emergency cesarean deliveries and 24 full term (68.5%). Of the 24 term infants, 16 were transferred to normal nursery (NN) (66.7%), and 8 infants were transferred to intermediate care (ITN)–intensive care nurseries (ICN) (33.5%). Decision-to-incision time was $29 \pm 11.64$ min (standard deviation); decision-to-delivery time was $35 \pm 12$ min. In Group 2, there were 23 OB-RRT deliveries, 15 full terms (65%). Of 15 term infants, 14 infants were transferred to NN (93%) and 1 infant was transferred to ITN (7%), $P = .058$. Overall decision-to-incision time was $8.09 \pm 4.23$ min, $P < .0001$, and decision-to-delivery time $10.3 \pm 4$ min, $P < .0001$. Groups did not differ significantly in maternal age, gravidity, parity, Apgar scores. Missing data precluded cord pH evaluation.

**DISCUSSION:** In our institution, OB-RRTs significantly decreased both decision-to-incision and decision-to-delivery times, bringing us well within ACOG recommendations. Although neonatal outcome, as determined by nursery disposition is not presently statistically significant, a trend is noted and additional measures of neonatal outcome need to be explored.

**Comparison of Methergine and Oxytocin for the Control of Postpartum Bleeding after Cesarean Delivery**

*Irvin J. Reiner, MD*
Texas Tech University Health Sciences Center, Odessa, Texas

*Glena Davis, DO; V. Daniel Castracane, PhD*

**OBJECTIVE:** This study was undertaken to emphasize the safety, utility, and economy in the use of methergine either alone or with oxytocin to minimize postpartum bleeding in patients undergoing uncomplicated cesarean deliveries.

**METHODS:** Patients who participated in a trial of surgical intravenous fluid management had their records reviewed to identify what medications were used during the postpartum study period. The drugs used in this study were oxytocin and Methergine. The protocol compares the two oxytocin regimens in two different protocols: long (standard) intravenous fluid use or short (test) intravenous fluid use. In the long intravenous fluid use, the Pitocin was administered for a prolonged period of time, while in the short period of intravenous fluid use, the Pitocin was terminated after 1 hour when the IV was removed, while Methergine became the main uterotonic agent thereafter.

**RESULTS:** The results of this study indicate that Methergine, alone or in combination with minimal transient oxytocin, resulted in no cases of postpartum hemorrhage in patients undergoing uncomplicated cesarean delivery. No subjects in this study had any adverse effects.

**CONCLUSION:** Using Methergine as a primary uterotonic agent in the postpartum period in uncomplicated cesarean deliveries by virtue of being generic and orally administered, is an efficient, effective and economical method to prevent postpartum hemorrhage in uncomplicated cesarean delivery patients.

**Attitudes of Pregnant Women Toward Spinal Muscular Atrophy Carrier Testing**

*Britton D. Rink, MD, MS*
The Ohio State University, Columbus, Ohio

*Laura A. Montgomery, MS; Courtney D. Lynch, PhD, MPH; Mona R. Prasad, MD, MPH; Thomas W. Prior, PhD*

**BACKGROUND:** Spinal muscular atrophy (SMA) is the second most common fatal autosomal recessive disorder, with a reported carrier frequency of 1/40–1/60.

**AIMS:** To evaluate pregnant women's attitudes toward carrier screening for SMA.

**METHOD:** Free carrier screening was offered to women during their prenatal genetic counseling session. Attitudes of all patients offered screening were surveyed.

**RESULTS:** Responses were available from 361 women among 500 individuals screened. Of those women surveyed, 155 (42.9%) declined testing. Among those who declined testing, 55.5% cited low anxiety about SMA, 33.6% didn't want prenatal diagnosis regardless of status, and 32.3% indicated that they declined because it wouldn't change their pregnancy management. After adjusting for ethnicity and age, the odds of agreeing to SMA testing was 79% lower among blacks as compared with whites ($P$ <.01). Of the 206 patients who underwent testing 74.8 % knew nothing about SMA prior to the genetic counseling session, 73.8% pursued testing because they were interested in their carrier status, and 56.3% were worried about the risk for pregnancy. Following disclosure of results 96.1% of patients reported that they were glad they pursued screening. Sixty-eight percent of patients reported that the discussion of SMA did not add to their overall anxiety about their pregnancy. Seventy-one percent of the participants who underwent screening reported that they would pursue screening if insurance covered testing.

**CONCLUSION:** Slightly more than one half of women accepted SMA carrier screening when it was offered. Race and cost are significant factors in patients' acceptance of genetic testing for SMA.

**Medicaid Recipients Benefit From a Comprehensive Maternity Program: Pregnancy Outcomes**

*Charles Rittenberg, MD, MHA*
Medical University of South Carolina, Charleston, South Carolina

*Scott Sullivan, MD, MSCR; Debbie Rhea, MPH; Niki Istwan, RN; Gary Stanziano, MD*

**OBJECTIVE:** Access to providers, information, and education is the foundation of the medical home model, yet little is known regarding its influence on pregnancy outcomes in various socioeconomic populations. We compared risk profiles and pregnancy outcomes of commercially insured and Medicaid recipients participating in a comprehensive maternity program.

**METHODS:** We analyzed data from pregnant women enrolled in a program of telephonic risk assessment, education specific to identified risks, and 24/7 clinical support encouraging healthy behaviors during pregnancy and adherence with each providers' plan-of-care (63,808 commercially insured and 5,760 Medicaid recipients).

**RESULTS:** Medicaid participants had statistically significant (all $P$ <.05) higher rates of teen pregnancy (12.8% versus 1.7%), 12 years of education or less (57.5% versus 18.9%), unmarried (52.9% versus 11.8%), smoker (9.2% versus 1.7%), obesity (35.8% versus 25.2%), abortion history (11.4% versus 6.3%), and prior preterm delivery (9.1% versus 5.3%). In the current pregnancy Medicaid participants had a higher incidence (all $P$ <.05) of hyperemesis (10.2% versus 7.4%), preterm labor (11.6% versus 9%), pregnancy-induced hypertension (8.7% versus 6.8%) and gestational diabetes (8.3% versus 7.2%). Use of the 24/7 nursing support line was similar (10.8% Medicaid versus 11.2% commercial, $P$ = .351). While Medicaid participants were at higher risk for adverse outcomes, preterm birth (PTB) rates were similar (12% Medicaid versus 11.3% commercial, $P$ = .118). Neonatal intensive care unit admission rates were lower for Medicaid participants than for the commercial group (8.6% versus 9.7%, $P$ <.001).

**CONCLUSIONS:** A comprehensive maternity program appears to be at least as beneficial to Medicaid recipients with higher risk patients having similar rates of PTB and lower rates of neonatal intensive care unit admission.

**Role of Sex in Antenatal Corticosteroids to Prevent Respiratory Distress Syndrome: Meta-Analysis**

*Stephanie Roberge, MSc*
Université Laval, Québec, Québec, Canada

*Emmanuel Bujold, MD MSc; Yves Lacasse, MD MSc*

**BACKGROUND:** Male gender has been associated with increased risk of adverse neonatal outcomes, including respiratory distress syndrome (RDS) and mortality in preterm births. However, the role of sex in response of antenatal corticosteroids has not been evaluated adequately.

**OBJECTIVES:** Review and analyse the evidence regarding the role of the sex in response to antenatal corticosteroid therapy in prevention of respiratory distress syndrome and adverse neonatal outcomes.

**METHODOLOGY:** A meta-analysis of randomized controlled trials was realized to compare relative risks (RR) of males and females for respiratory distress syndrome, intraventricular haemorrhage (IVH), and neonatal mortality. Relative risks were calculated using random effects model and Mantel–Haenszel with 95% confidence intervals (CI).

**RESULTS:** From 7,982 citations, 247 were potentially appropriate, and of these, 20 met the inclusion criteria. Data were reported according to gender in six studies, for a total of 1,565 pregnant women who were randomized and who gave birth to 1,688 neonates. Antenatal corticosteroid therapy was associated with a greater risk reduction of RDS in preterm females than preterm males (RR, 0.51; 95% CI, 0.34–0.75 for females versus RR, 0.60; 95% CI, 0.39–0.91 for male foetuses, $P < .05$). Such trends were observed for risk reduction of IVH (RR, 0.26; 95% CI, 0.09–0.75 versus RR, 0.43; 95% CI, 0.23–0.80, $P > .05$) and neonatal mortality (RR, 0.42; 95% CI, 0.21–0.82 versus RR, 0.57; 95% CI, 0.34–0.97, $P > .05$) but those differences did not reach a significant level.

**CONCLUSION:** Foetal response to antenatal corticosteroid therapy is different between males and females. Future investigations should consider this important variable in their analysis.

**Micro-RNAs Expression in Chorioamniotic Membranes From Patients With Preterm Labor and Preeclampsia**

*Lorna Rodriguez, MD*
The University of Florida College of Medicine, Gainesville, Florida

*Amra Chaudhri, MD; Kathleen Mayor-Lynn, MD; Naser Chegini, PhD*

**OBJECTIVE:** To identify and confirm the expression of microRNAs (miRNAs) in chorioamniotic membranes from pregnancies complicated by preterm labor (PTL) and preeclampsia.

**METHODS:** Microarray profiling and realtime PCR were used to determine miRNA expression on chorioamniotic membranes from normal term pregnancies (n = 4), pregnancies complicated by PTL (n = 4), and preeclampsia (n = 4).

**RESULTS:** A total of 1,213 miRNAs, including 854 Sanger 12 miRNAs, were identified in all samples. Among these, 416 were commonly expressed in all tissues, of which 11 were differentially expressed based on $P \leq .05$. Further analysis based on fold-change differences in expression revealed an altered expression of a number of miRNAs in pregnancies complicated by PTL and preeclampsia, with 40 miRNAs up-regulated in PTL, and 264 and 219 miRNAs down-regulated in PTL and preeclampsia, respectively. Among the differentially expressed miRNAs, the expression of miR-26a, miR-29a, miR-30c, miR-125b, and miR-199b-5p was confirmed by realtime PCR. Chorionic membranes from pregnancies complicated by PTL showed an increased expression of miR-125b and miR-29a and a decreased expression of miRNA-125b in membranes from pregnancies with preeclampsia. There was a similar level of expression for miRNA 199b-5p, -26a, and -30c in all study groups.

**CONCLUSION:** A selective number of miRNAs are expressed and altered during PTL and preeclampsia. The tissue specific expression of these miRNAs implies their possible regulatory functions by targeting specific genes whose products might be involved in normal labor and the pathogenesis of PTL and preeclampsia. Further investigation is underway to assess the precise target of these miRNAs.

**Improving Shoulder Dystocia Documentation With Simulation Training and Delivery Note Templates**

*Stacey Leigh Rubin, MD*
Albert Einstein College of Medicine, Bronx, New York

*Peter S. Bernstein, MD; Nelli Fisher, MD; Hye Heo, MD; Ashlesha Dayal, MD; Dena Goffman, MD*

**OBJECTIVE:** Compare shoulder dystocia (SD) documentation before participation in a SD simulation program, after completion of the program, and after implementation of a standardized delivery note template.

**METHODS:** Between July 2006 and June 2007, clinicians participated in a simulation and education program addressing maneuvers, management, and documentation of SD. For this study, ICD-9 codes were used to identify patients with SD in three distinct 1-year periods: Baseline (July 2005–June 2006), Postsimulation (July 2007–June 2008), and Posttemplate (July 2008–June 2009). A retrospective chart review was performed, and delivery notes were scored using our previously published checklist for routine components of documentation (maximum 7), and SD components (maximum 8).

**RESULTS:** 109 cases of SD were identified (25 Baseline, 52 Postsimulation, and 32 Posttemplate). The incidence of SD in our population in the time periods studied was 0.5%, 1%, and 0.7%, respectively. Documentation of SD was significantly improved in the Posttemplate period when compared with each prior time period.

| Documentation Components | Baseline<br>n = 25 | Postsimulation<br>n = 52 | Posttemplate<br>n = 32 |
|---|---|---|---|
| Routine (maximum 7 ) | 4 (3–5) | 4 (4–5)[†] | 5 (5–5)[‡] |
| Shoulder Dystocia (maximum 8) | 5 (4–7) | 6 (4–7)[†] | 7 (5–8)[‡] |
| Total (maximum 15) | 9 (7–11) | 10 (8–11)[†] | 12 (10–13)[‡] |

∗ Data presented as Median (IQR)
[†] Baseline versus Postsimulation, *P* = NS for all outcome variables
[‡] *P* <.01 Posttemplate compared with Baseline and with Postsimulation

**CONCLUSIONS:** Shoulder dystocia is an obstetric emergency that can result in permanent injury to the neonate, and is a leading cause for litigation. To minimize liability and successful malpractice lawsuits, it is imperative to appropriately document standard of care management for SD. Simply educating providers about documentation is not sufficient to achieve this goal, but implementing a standardized delivery note template improves documentation.

**Neonatal Outcomes From Multiple Nuchal Cord Entanglements**

*Alia Shbeeb, MD*
Banner Good Samaritan Medical Center, Phoenix, Arizona

*Laura Mercer, M; Garrett Lam, MD; Melissa Ingersoll, RN, BSN, CRC*

**BACKGROUND:** Nuchal cord entanglement is observed in 23–33% of pregnancies. As pregnancy progresses, cord entanglement increases as a linear progression from 5.8% at 20 weeks of gestation to 29% at 42 weeks of gestation. The presence of two or more loops is estimated to affect between 2.5% and 8.3% of all pregnancies.

**OBJECTIVE:** To determine if there is no association of fetal compromise or other adverse neonatal outcomes with the presence of a multiple versus single intrapartum nuchal cords.

**METHOD:** Computerized data from Banner Good Samaritan Medical Center from December 25, 2006 to August 12, 2007 were reviewed. Only singleton, vertex and term pregnancies undergoing labor and delivery were analyzed. Mothers with active perinatal complications were excluded. Primary outcomes included Apgar scores, umbilical artery and umbilical vein cord pH's, length of neonatal hospitalization, multiple nuchal cords, EGA, method of delivery, and presence of oligohydramnios. Other outcomes collected include intrapartum fetal heart rate abnormalities, evidence of IUGR and term intrauterine fetal demise.

**RESULTS:** Comparison of Primary and Secondary Outcomes with Nuchal Cord Numbers Single Nuchal Cord (%) Multiple Nuchal Cords (%) P-value Apgar at 1 min n/a n/a 0.333 Apgar at 5 min n/a n/a 0.188 Umbilical artery pH n/a n/a 0.351 Oligohydramnios 7.1 2.8 0.630 IUGR 4.3 2.1 0.212 Abnormal FHT 31.1 37.3 0.303 Characteristics of infants admitted to NICU (all with single nuchal cord) Gender (% male) UA cord pH NICU LOS 5/7 (71.4) 7.10 5.0 Only three term intrauterine fetal demises were identified during this study period, all of which did not have any nuchal cords noted; one had a true knot in the umbilical cord.

**OUTCOME:** There is no significant association of number of nuchal cord loops with arterial cord pH, Apgar score, or NICU hospitalization stay.

**Postpartum Depression Screening: The Role of Patient Demographics**

*Nicole M. Siems, MD*
Mount Sinai School of Medicine - Jersey City Program, Jersey City, New Jersey

*Christopher Marengo, MD; Ahmed Yousry, MD; Carol Gagliardi, MD*

**OBJECTIVE:** To determine factors contributing to a disparity between initial positive screening on the Edinburgh Postpartum Depression Scale (EPDS) and negative results on rescreening in a diverse urban population.

**METHODS:** During a 6-month period, all patients originally scoring more than 12 on the EPDS were identified. On rescreening, a healthcare professional explained all questions in the preferred language (English or other). Twenty-four patients who rescreened less than 9 constituted the study group. A control group of twenty-five women initially scoring less than 9 on the EPDS was generated using a random number table. Groups were compared to ascertain potential demographic differences. Data were assessed using unpaired *t* test or chi square test, $P < .05$

**RESULTS:** There were no significant differences between study and control groups as to maternal age, gravidity, parity, nursery assignment, marital–employment status. A significant difference was found in the preferred language between groups with 12/24 (50%) in the study group and 21/25 (84%) in the control group, having English as a preferred language, $P = .015$.

**CONCLUSIONS:** Written translations of EPDS are provided to patients in their preferred language, however, our study suggests that these translations may not convey the appropriate meaning and thus not accurately screen our population. Alternatively, lack of a cover letter in their preferred language may be an impediment to understanding the purpose or temporal context of the questions. Reexamination of the translations and provision of a preferred language cover letter may facilitate better resource use and patient care.

**Can Blood Pressure After Delivery Predict Women at Risk for Persistent Hypertension?**

*Sindhu K. Srinivas, MD, MSCE*
University of Pennsylvania, Philadelphia, Pennsylvania

*Sarah J. Ratcliffe, PhD; Andrea G. Edlow, MD; Michal A. Elovitz, MD*

**OBJECTIVE:** Cardiovascular disease (CVD) is the leading cause of death in women and CVD mortality is significantly increased in women with preeclampsia (PRE). We assessed whether blood pressure level at discharge is associated with persistent HTN after delivery among women with and without PRE.

**STUDY DESIGN:** 179 women without CHTN (61 with PRE and 118 without PRE) were evaluated in this retrospective cohort. Discharge hypertension (DCHTN) was systolic at 130 or more and diastolic at 85 or more or discharge on antihypertensives. The presence of hypertension at follow-up (FUHTN) was assessed by phone questionnaire 6–13 months after delivery. Fisher exact tests were performed to evaluate the association between DCHTN and FUHTN. Analyses were then stratified by PRE.

**RESULTS:** In those with PRE, there was no association between DCHTN and FUHTN ($P$ = 1.00). Specifically of those without DCHTN, 37% had FUHTN and of those with DCHTN, 36% had FUHTN. Among these women, discharge with antihypertensives was associated with FUHTN ($P$ = .014). Among women without PRE there was no association between DCHTN and FUHTN ($P$ = .23). Specifically, of the 31 women who had DCHTN, only 6% had FUHTN and of the 81 who did not have DCHTN, only 1% had FUHTN.

**CONCLUSION:** Among women with or without PRE, there is no association between DCHTN and FUHTN. This suggests the need for follow-up in all PRE women since DCHTN does not predict FUHTN. Continued research is needed to better identify women with PRE who are at greatest risk for future CVD so that patients may be engaged during pregnancy, a time they are most likely to seek care.

**Episiotomy and Rates of Third-Degree and Fourth-Degree Lacerations in a Teaching Institution**

*Jessica Stine, MD*
*University of Miami Miller School of Medicine, Miami, Florida*

*Lesley de la Torre, DO; Eric D. Schroeder, MD; Michael Stine, DO; Lunthita Duthely, MS; Victor Hugo Gonzalez-Quintero, MD, MPH*

**OBJECTIVE:** Episiotomy is still one of the most common surgical procedures performed in the United States. There is adequate evidence to recommend the restrictive use of episiotomy and discontinue the routine use of episiotomy. The objective of this study was to compare pregnancy characteristics and the rates of third-degree and fourth-degree lacerations among women who undergo episiotomy versus those who do not.

**METHODS:** Retrospective study was performed on all women who gave birth vaginally at our institution from January 1, 2000 to December 31, 2007. Patients were divided into two groups: women who received an episiotomy and those who did not. Maternal pregnancy complications and neonatal outcomes were collected. Primary outcome was the rate of third-degree and fourth-degree lacerations.

**RESULTS:** Using our perinatal database, 30,709 deliveries were identified. Women in the episiotomy group were younger, had fewer prior pregnancies, and gave birth later than the no-episiotomy group. Similarly women in the episiotomy group had higher rates of preeclampsia, chorioamnionitis, and operative delivery. Mothers who underwent episiotomy and gave birth to larger babies had higher rates of macrosomia; their infants had higher rates of neonatal care unit admission and low birth weights. Importantly, women who underwent episiotomy had higher rates of third-degree and fourth-degree lacerations (2.4 % versus 0.6 %, $P$ <.001), but higher rates of first-degree and second-degree lacerations (3.4% versus 34%, $P$ <.001).

**CONCLUSIONS:** Episiotomy increases the rate of third-degree and fourth-degree lacerations, and its use must continue to be restricted.

**Maternal Underweight Status and Association With Preterm Contractions**

*Teresa Tam, M.D.*
Resurrection Healthcare- St. Joseph Hospital, Chicago, Illinois

*Mihai Muresan, MD; Neal Ipema, M.D.*

**OBJECTIVE:** The purpose of the study is to investigate whether underweight pregnant women are more likely to be admitted for preterm contractions compared with normal or overweight women.

**METHODS:** This is a retrospective, cohort study of patients who presented for preterm contractions from January 1, 2000, through January 1, 2008. Body mass index (BMI) categories include index rating of 19 or less as underweight, 20–25 as normal, and greater than 25 as overweight, based on the National Institutes of Health standards. Preterm contractions were documented using an external tocodynamometer. Exclusion criteria included pregnancies with multiple gestations, gestational age less than 24 weeks or greater than 37 weeks, neonatal anomalies, and premature rupture of membrane. Data was analyzed using SPSS 14.0. Statistical data was analyzed using a probability model. Chi-square testing compared the probability of admission as a function of weight groups as well as age and race variables.

**RESULTS:** Of the 840 patients identified with preterm contractions, 7% were admitted while 93% were discharged. Of the total patients, 15% were underweight, 43% normal weight, and 42% overweight. Admission for preterm contractions was highest in underweight pregnant women (95%), followed by normal weight (5%), and none were overweight. Both basic and augmented probability models show that normal weight patients were less likely to be admitted for preterm contractions compared with underweight patients even after controlling for age and race.

**CONCLUSION:** These results suggest that underweight patients are more likely to be admitted for preterm contractions compared with normal weight patients. No overweight patients were admitted for preterm contractions.

**Gestational Weight Gain: How to Institute New Guidelines**

*Gina M. Tassone, BA*
University of Massachusetts Medical School, Worcester, Massachusetts

*Tiffany A. Moore Simas, MD, MPH, MEd; Robert E. Berry, Jr, MD; Janet Hardy, PhD, MSc, MPH*

**OBJECTIVE:** Body mass index (BMI)-specific gestational weight gain (GWG) adherence optimizes pregnancy outcomes. In May 2009, the Institute of Medicine (IOM) updated its recommendations. Our objective was to assess provider knowledge of current guidelines and barriers to enforcement.

**METHODS:** An anonymous online-survey was piloted to ob-gyn residents in September 2009 at a tertiary-care hospital in central Massachusetts. Questions addressed counseling, guideline knowledge, and learning preferences.

**RESULTS:** Of 20 respondents, 10% were unaware of updated recommendations. 100% respondents routinely use BMI to assess patients' weight-status at initial prenatal visit; only 55% identified GWG recommendations as being BMI-specific. Some falsely identified age (10%), race (5%), and prior-pregnancy weight retention (20%) as influencing recommended gain. 15%, 55%, and 55% of respondents reported prepregnancy (pp) BMI, pp-weight, and height as always–often available in the chart. 55% calculate pp BMI. 45%, 65%, 40%, and 30% of respondents selected correct GWG ranges for underweight, normal-weight, overweight, and obese gravidas, respectively, and less than 30% correctly identified BMI ranges associated with weight categories. Respondents were more likely to discuss GWG with overweight–obese patients than all comers, and 85% felt counseling was very–somewhat effective. Discussion barriers included unavailable measurements (50%) and lack of time (50%). Potentially useful modalities to increase provider knowledge and counseling comfort include: lectures (70%), resource–referral listings (76%), office prompts (65%), and informational pamphlets (55%).

**CONCLUSIONS:** Our pilot results show that counseling barriers for GWG exist, including provider knowledge inadequacies and support–comfort for knowledge transfer to patients. Further evaluation with increased and diverse samples may prove informative in developing office and educational interventions.

**Midtrimester Microbial Invasion of the Amniotic Cavity and Very Preterm Birth**

*Amelie Tetu, MSc*
Université Laval, Québec, Québec, Canada

*Emmanuel Bujold, MD, MSc; Louise Duperron, MD; Valerie Morin, MD; Jean Gekas, MD, PhD; Fabien Rallu, PhD*

**OBJECTIVE:** It has been suggested that midtrimester microbial invasion of the amniotic cavity (MIAC), especially with Mycoplasma species, could be observed in an important proportion of women who will undergo very preterm birth. We aimed to evaluate the rate of midtrimester MIAC in a large population.

**STUDY DESIGN:** A prospective cohort study, including informed consent, questionnaires, and amniotic fluid (AF) samples, was conducted in women undergoing midtrimester amniocentesis for fetal karyotyping. The presence of MIAC was evaluated using bacteriologic cultures and PCR. More than 1 mL of AF was used to inoculate an aerobic–facultative anaerobic pediatric bottle with an automated hemoculture microbial detection system (incubation of more than 7 days). Specific quantitative PCR for *Mycoplasma* species (*Ureaplasma urealyticum*, *U. parvum*, and *Mycoplasma hominis*) was also conducted. Women were followed until delivery for the presence of the primary outcome: delivery at less than 34 weeks of gestation.

**RESULTS:** 854 women were recruited at the time of amniocentesis between 16 weeks and 23 weeks gestation. Of them, four had positive cultures, but they were all considered to be usual contaminant and there were all associated with term delivery. No women had a positive PCR. Twenty-five women gave birth before 34 weeks of gestation, with all negative midtrimester microbiologic results. Of note, the median income was greater than $50,000, the median scholar was greater than 14 years, and the median prepregnancy weight was 61 kg. Ninety-one percent were from caucasian origins.

**CONCLUSION:** In women with high socioeconomic status, we found no case of MIAC in midtrimester AF and, therefore, no correlation with very preterm birth.

**Utility of Baseline Liver Function Testing in Morbidly Obese Patients**

*Amanda Victory, MD*
University of Rochester, Rochester, New York

*Danielle E. Durie, MD; Kathryn Somers; Brittany Walker; Eva K. Pressman, MD; Loralei Thornburg, MD*

**OBJECTIVE:** Morbid obesity is a risk factor for both preeclampsia and nonalcoholic steatohepatitis. Since both can elevate liver function testing (LFTs), baseline LFTs have been proposed for this population. We sought to determine the rate of baseline LFT elevations among morbidly obese and normal-weight pregnant women without diabetes or liver disease.

**METHODS:** Electronic records were reviewed for women without underlying diabetes who gave birth at our institution from January 2004 through December 2008. Women were divided into four groups: under–normal weight (body mass index [BMI] less than 25), class II (BMI 35–39.9), class IIIa (BMI 40–44.9) and class IIIb obesity (BMI 45 or greater). Rates of elevations of liver transaminases before 24 weeks of gestation were compared among groups.

**RESULTS:** Of 3,916 patients reviewed, 454 (12%) underwent baseline LFT testing. 22 patients were eliminated for chronic liver disease (hepatitis B or hepatitis C, cholestasis, or alcohol abuse), leaving 432 patients (205 under–normal weight, 130 class II, 64 class IIIa, 33 class IIIb). The overall rate of elevated LFTs was 5% and was similar among individual groups (4%, 4%, 8%, and 3%, respectively, $P = .8$). Posthoc power analysis indicates an 80% power is needed to detect differences of more than 8% between classes.

**CONCLUSION:** The rate of baseline LFT elevation was 5% for all women regardless of maternal weight. This did not vary by the degree of obesity, although power to detect variation between the groups was limited. In morbidly obese patients without other risk factors for liver disease, baseline LFT testing does not appear to be warranted.

**Retrospective Cohort of Teratogen Exposure as an Indication for Prenatal Diagnosis**

*Alexis M. Tran, DO*
Western University of Health Sciences/College of Osteopathic Medicine of the Pacific, Arrowhead Regional Medical Center, Albany Medical Center, Pomona, California

*Lony C. Castro, MD*

**OBJECTIVE:** To identify the frequency and type of teratogen exposure in pregnant women referred to a suburban prenatal diagnosis clinic serving a largely indigent population.

**METHOD:** This is a retrospective cohort study of pregnant patients referred for genetics counseling (GC) from January 2, 2007 through December 31, 2007 at Arrowhead Regional Medical Center. 266 charts were identified from GC records. Data abstracted included indication for referral, teratogen exposure, timing of exposure, patient–physician awareness, estimated gestational age (GA), race, employment status, obstetric history. Women referred for teratogen exposure were compared with those referred for other indications.

**RESULTS:** Teratogen exposure was identified as a reason for GC in 7.5% of patients. Of these, methamphetamine, alcohol, and other illicit drug use comprised 80%. Medications comprised 20%. Characteristics of cohort included mean age, which was significantly ($P$ <.01; Student $t$ test) lower in the exposure group 23 (SEM 0.9, n = 20) compared with 30.2 (SEM 0.5, n = 245) in the nonexposed; nulliparity (55% compared with 35%, chi-square test, $P$ = .14); nonwhite race (60 % compared with 16%, $P$ = .02). Mean GA at the time of exposure was 11 weeks, 4 days (standard deviation was 7).

**CONCLUSION:** The teratogen exposed comprised a smaller proportion for GC than for other counseling issues (AMA, obstetric outcomes, maternal health, first-trimester screens, or anomalies). However, combined illicit drug and alcohol use composed the highest rate for GC in cohort. The remainders were medical indications for which alternatives often exist. Referrals may underestimate the frequency of teratogen exposures as most occur before pregnancy awareness.

**Maternal Obesity and the Severity of Hyperemesis Gravidarum**

*Janelle R. Walton, MD*
The Ohio State University Medical Center, Columbus, Ohio

*Hugh Ehrenberg, MD*

**OBJECTIVE:** To assess for an association between pregravid body habitus and the severity of hyperemesis gravidarum (HEG).

**METHODS:** For this retrospective cohort, patients admitted for HEG from January 1997 to December 2007 were indentified via ICD-9 codes. Records were abstracted for demographic, hospital admission, laboratory, and delivery data. Subjects were divided by pregravid body mass index (BMI) into underweight (U), BMI less than 18.9; normal (N), BMI of 18.9–24.9); overweight (Ov), BMI of 25–30; and obese (Ob), BMI greater than 30. Outcomes were compared among BMI groups, including frequency and length of admissions, metabolic derangement, weight loss, and birth weight.

**RESULTS:** 253 subjects were included (Ob, 58 [22.9%]; Ov, 80 [31.6%]; N, 94 [37.2%]; U, 21 [8%]). The groups were similar in parity, race and age. Ov–Ob were less likely to see private physicians than N (37.7% versus 57.5%). Ov–Ob and U–N were hospitalized with similar overall frequency and length of stay (LOS). The risk of hospitalization was higher in the third trimester for Ov–Ob (8.7% versus 1.7%), who were more likely to experience weight loss, although to a lesser degree. Ketonuria and electrolyte imbalance rates were similar between groups.

**CONCLUSION:** Pregravid body habitus has little effect on the early disease course and severity of HEG. The risk for hospitalization increases later in pregnancy for those in the Ov–Ob group. These patients also lose weight more frequently, but appear to be protected from severe weight loss. This variation may be explained by differences in nutritional reserve and metabolism late in pregnancy.

**Does Preeclampsia Predict the Risk of Late Postpartum Eclampsia?**

*Diana S.Wolfe, MD, MPH*
Harbor-UCLA Medical Center, Torrance, California

*Shauna F. Williams, MD; Michael G. Ross, MD, MPH; Joseph J. Apuzzio, MD*

**OBJECTIVE:** Late postpartum eclampsia (LPE) is defined as the onset of seizure activity 48 hours or more after delivery. We sought to determine if LPE commonly occurs subsequent to diagnosis of preeclampsia, and if patients demonstrate laboratory evidence of eclampsia.

**METHODS:** A retrospective review of all patients with eclampsia who presented to University Hospital, UMDNJ, Newark between July 1, 1998 and June 30, 2008 was performed. Patients were identified by discharge diagnosis and individual medical records that were reviewed.

**RESULTS:** During this 10-year period, there were approximately 18,665 deliveries. A total of 71 patients had a discharge diagnosis of eclampsia, although only 19 (38%) were confirmed by chart review to have eclampsia. The remaining 44 patients had preeclampsia or a preexisting seizure disorder. Of the 19 with eclampsia, 12 seized prior to or during delivery and seven seized postpartum. Of the seven who had postpartum eclampsia, five had LPE, (mode 7 days, range 3–15 days). None of the five had elevated blood pressure or showed laboratory evidence of preeclampsia during prenatal, intrapartum, or immediate postpartum periods. At the time of seizure, four of the five cases were hypertensive and all five cases had abnormal lab values, including proteinuria.

**CONCLUSION:** The findings from this review suggest an incidence of LPE of 25 per 100,000 births. Patients with LPE cannot be predicted by a prior diagnosis of preeclampsia. The development of laboratory or clinical criteria that predict LPE is necessary for the administration of prophylactic therapy.

**Perineal Body Length and Lacerations: How Do They Differ by Ethnicity**

*Luchin F. Wong, MD, MPH*
Santa Clara Valley Medical Center, San Jose, California

*Teresa Sparks, MD; Amanda Yeaton-Massey, BS; Jesus Granados, BS; Stephanie Handler, BS; Aaron B. Caughey, MD, PhD*

**OBJECTIVE:** To investigate associations between perineal body length (PBL), perineal lacerations, and ethnicity.

**METHODS:** Prospective cohort study of women in the third trimester of pregnancy with singleton gestations. Perineal body length was measured from the posterior vaginal fourchette to the center of the anus to the nearest 0.5 cm. Perinatal outcomes, including perineal lacerations, were abstracted from medical records. The chi square test was used to compare proportions of women with outcomes, and multivariable analyses were used to control for potential confounders.

**RESULTS:** PBLs in our cohort ranged from 2 cm to 7 cm, with a median of 4 cm. Among white women, the median PBL was 4 cm (range 2–6.5 cm). For African American, Latina, and Asian women, the median PBL was 3.5 cm (range 2.5–6 cm), 4.5 cm (range 2.5–7 cm), and 4 cm (range 2.5–6 cm), respectively. We found a nonsignificant difference in perineal laceration rates, comparing white (59.4%), African-American (41.2%), Latina (48.2%), and Asian women (74.4%, *P* = .061). When adjusting for potential confounders, the odds of perineal laceration during vaginal delivery for Asian women is 4.28 times greater than that of white women (*P* = .041). However, the odds of perineal laceration among African-American (adjuste odds ratio [AOR], 0.89; *P* = .89) or Latina women (AOR, 1.08, *P* =.91) as compared with white women were not significantly different.

**CONCLUSION:** While Asian women had higher odds of perineal laceration during VD, their median perineal length was consistent with that of our entire cohort. Further investigation will focus on reasons for these differences in laceration rates.

**OFFICE PRACTICE**

## Impairment in Relationship Satisfaction in Women With Hypoactive Sexual Desire Disorder

*Lesley M. Arnold, MD*
University of Cincinnati, Cincinnati, Ohio

*David Goldmeie; David Bakish, MD; Andrew Goldstein; Glen Wunderlich, PhD; Diane Lewis-D'Agostino*

**OBJECTIVE:** To compare relationship satisfaction in women aged 18–65 years with Hypoactive Sexual Desire Disorder (HSDD) and with no Female Sexual Dysfunction (FSD).

**METHODS:** Women participating in two, 4-week studies, one in North America and one in Europe, completed the Locke–Wallace Marital Adjustment Scale (MAS). This scale evaluates relationship satisfaction on a scale from 2–158, with lower scores indicting lower satisfaction. Participants were women in stable, monogamous, heterosexual relationships of at least 12 months, whose partners were physically available for at least 50% of the nonworking week. Participants met DSM-IV diagnostic criteria for HSDD, or Female Sexual Arousal Disorder (North American study only), or had no FSD.

**RESULTS:** Both studies had approximately equal representation of women aged above and below 50 years. Of 223 women in the North American study, 113 had HSDD and 61 had no FSD. The European study included 254 women: 130 with HSDD and 124 with no FSD. North American women with HSDD had a mean (standard deviation [SD]) MAS score of 112.6 (24.6). This was significantly lower than the mean MAS score in North American women without FSD: 120.2 (19.4) ($P$ = .0003). European women with HSDD had a mean (SD) MAS score of 104.2 (24.4). This was significantly lower than the mean MAS score in European women without FSD: 125.6 (17.5) ($P$ <.0001).

**CONCLUSIONS:** North American and European women with HSDD have lower MAS scores than women without FSD, indicating that HSDD is associated with lower relationship satisfaction.

**Maternal Depression Screening: A Quality of Care Initiative**

*Janice I. French, CNM, MS*
LA Best Babies Network, Los Angeles, California

*Carolina Reyes, MD; M. Lynn Yonekura, MD; Beiney Nercissian, BS; Jennifer Ustianov, RN, BSN; Annette Rexroad, PhD, MPH*

**OBJECTIVE:** Unrecognized perinatal depression raises risks for pregnancy complications and sets the stage for lifelong health, developmental, and behavioral problems. National guidelines recommend screening every trimester and postpartum. Guidelines are not implemented consistently across practice settings and compromise the quality of care. The Healthy Births Care Quality Collaborative (HBCQC) established a culturally competent care quality framework combining a client-centered, community-based team approach with proven strategies to improve screening and treatment practices.

**METHODS:** The HBCQC developed and coordinated a web-based data registry, providing reminders for depression screening every trimester. Teams (3– 5 individuals) representing all staffing levels from ten safety-net clinics collected baseline data on current screening practices and referral networks, attended 2-day learning sessions to review their protocols and best-practice clinical guidelines, and implemented strategies to change office practices. Teams met regularly to plan change strategies and collect data on screening and treatment practices. Teams shared monthly reports and monitored performance towards guideline implementation by tracking set measures.

**RESULTS:** Since July 2008, quality improvement efforts increased maternal depression screening at the onset of prenatal care collectively from 36% to 86%.

**CONCLUSION:** The quality of perinatal care was improved by using an underlying framework that is respectful of every family's cultural background, adopts the most effective methods of care available, refers families to community resources, involves the whole clinic team, and uses web-based technology for shared learning. This rapid systems change model can be spread to other prenatal care providers.

**Efficacy of the Use of Flibanserin, 100 mg qhs, in Premenopausal Women With Hypoactive Sexual Desire Disorder: Sexual Satisfaction**

*Michael L. Krychman, MD*
Medical Director of Sexual Medicine Hoag Hospital, Newport Beach, California

*Sheryl Kingsburg, PhD; Elaine Jolly, MD; Diana Hoppe, MD; Michael Sands, PhD*

**OBJECTIVE:** To assess the efficacy of 24 weeks of treatment with flibanserin, 100 mg qhs, in improving sexual satisfaction in North American premenopausal women with generalized acquired Hypoactive Sexual Desire Disorder (HSDD).

**METHODS:** Data on the efficacy of the use of flibanserin, 100 mg qhs, from two randomized placebo-controlled North American trials (VIOLET, 511.71 and DAISY, 511.75) in women with generalized acquired HSDD were pooled. Participants were premenopausal women with a primary diagnosis of generalized acquired HSDD who were in a stable, monogamous, heterosexual relationship with a sexually functional partner. Participants completed the Female Sexual Function Index (FSFI) at baseline and after 24 weeks of treatment with flibanserin or placebo. Scores on the FSFI satisfaction domain were analyzed.

**RESULTS:** The mean (standard deviation) baselines scores for the FSFI satisfaction domain were 2.8 (1.1) for the placebo group (n = 677) and 2.8 (1.2) for the flibanserin, 100 mg qhs, group (n = 659). Mean (SE) changes from baseline at week 24 were significantly greater after treatment with flibanserin, 100 mg qhs, than placebo: 0.9 (0.1) versus 0.6 (0.1); $P < .0001$.

**CONCLUSIONS:** In North American premenopausal women with HSDD, 24 weeks of treatment with flibanserin, 100 mg qhs, was associated with significant improvements in sexual satisfaction (FSFI satisfaction domain score) versus placebo.

**Healthcare Provider Assessment of Sexual Dysfunction and the Use of Screeners**

*Michael L. Krychman, MD*
Hoag Hospital, Newport Beach, California

*Sheryl Kingsburg, PhD*

**OBJECTIVE:** To assess healthcare providers' perceived knowledge, training, and comfort assessing female sexual dysfunctions, and use of screening tools.

**METHODS:** A computer survey was available to attendees visiting the Boehringer–Ingelheim booth in the exhibit hall during the 2009 ACOG Annual Meeting.

**RESULTS:** Eighty-four participants (66% ob-gyns) completed the survey. The majority rated their medical or graduate school training in sexual health communication as less than adequate; 50% rated residency training as less than adequate. When asked "How likely are you to discuss sexual health with your premenopausal patients who have a sexual complaint?," 23% were somewhat likely and more than 40% said they were very likely. More than 35% were somewhat likely to discuss sexual health during a gynecologic visit and 23% were very likely. Over 40% were somewhat likely to discuss sexual health during an annual exam, with 13% very likely. Thirty-one percent spent less than 10 minutes addressing a reported sexual complaint; 29% between 10 minutes and 20 minutes. Only 20% currently screen patients for sexual problems. Barriers include discomfort, belief that patients would not approve, and that sexual problems are not appropriate for their practice. Over half do not use screening questionnaires; however, 70% would use a brief diagnostic screening assessment tool for female sexual dysfunction if available.

**CONCLUSION:** Most healthcare providers do not feel adequately trained to discuss sexual health concerns with patients and do not routinely address sexual health issues. Although most do not routinely use screening questionnaires, 70% would use a brief diagnostic screener for female sexual dysfunctions

**OB CARES: The Obstetric Clinics and Resources Study**

*Christie A. Lancaster, MD, MSc*
University of Michigan, Ann Arbor, Michigan

*Gina L. Fedock, MSW; Erin Henshaw, PhD; Jane Forman, ScD, MHS; Matthew M. Davis, MD, MAPP; Heather A. Flynn, PhD*

**OBJECTIVE:** Despite recommendations for routine screening, most women with perinatal depression are undetected and undertreated. The purpose of this study was to explore influences on addressing depression in obstetric practice.

**METHODS:** We conducted an exploratory qualitative analysis using snowball sampling to recruit obstetric providers for semistructured interviews. Two study team members analyzed the data using grounded theory techniques to identify recurrent themes.

**RESULTS:** We interviewed 20 providers from two institutions. Despite the routinized nature of prenatal care, decisions to address perinatal depression occurred at the level of the individual provider. Providers noted two main categories of influence on providing depression care: External Influences, which originated from outside the provider; and Internal Influences, which were cognitive and emotive self-reflections. External influences contained three major themes: The Provider's "Toolbox" (Training; Resources; System Coordination); Provider Perceptions of Patient Norms (Views of Mental Illness, Views of Treatment; Views of Motherhood); and Provider Perceptions of System Norms (Health System Norms; Specialty Norms). Internal influences included Experiential Influences (Familiarity, Prior Encounters, Engagement Style), Certainty (Trust, Comfort), and Roles and Responsibilities (Role Identity, Accountability). Internally derived influences were the most directly related factors to provider decision-making. In addition, perceived control over influencing factors was a moderating theme in addressing depression.

**CONCLUSION:** Our findings demonstrate that providers perceive patient, system, and particularly internal influences upon decisions to address perinatal depression. We feel that these findings raise questions about traditional models of disseminating evidence-based recommendations and support the development of tailored provider interventions to improve engagement with depression care delivery.

**Onset of Efficacy of Flibanserin in Premenopausal Women With Hypoactive Sexual Desire Disorder**

*James A. Simon, MD*
George Washingotn University, Washington, District of Columbia

*John M. Thorp, MD; Molly Katz, MD; Robert Pyke, MD, PhD*

**OBJECTIVE:** To assess onset of efficacy of treatment with flibanserin, 100 mg qhs, in North American premenopausal women with generalized acquired Hypoactive Sexual Desire Disorder (HSDD).

**METHODS:** Data from two randomized placebo-controlled trials (VIOLET, 511.71; DAISY, 511.75) were pooled in a prespecified analysis. Coprimary endpoints were change from baseline (weeks -4–0) to study end (weeks 21–24) in the number of satisfying sexual events (SSE) and sexual desire score per month, measured using a daily electronic diary (eDiary). Secondary endpoints included change from baseline to study end in Female Sexual Function Index (FSFI) desire domain, FSFI total, Female Sexual Distress Scale-Revised (FSDS-R) Item 13, FSDS-R total score; these were assessed at weeks 0, 4, 8, 16, 24.

**RESULTS:** 1,378 women were included in this analysis (placebo: 693; flibanserin, 100 mg qhs: 685). Beginning at week 4, flibanserin, 100 mg qhs, significantly improved mean baseline-subtracted frequency of SSE, eDiary desire, FSFI desire domain, FSFI total, FSDS-R Item 13 and total scores, and proportion of Patient's Global Impression of Improvement (PGI-I)- defined responders on these endpoints, versus placebo at all time points ($P$ <.05, for all).

**CONCLUSIONS:** Compared with placebo, flibanserin, 100 mg qhs, significantly improved sexual desire (eDiary desire, FSFI desire domain), overall sexual functioning (FSFI score), distress associated with low desire (FSDS-R Item 13) and sexual dysfunction (FSDS-R total), SSE, and the proportion of responders on these endpoints in North American premenopausal women with HSDD from the first point at which assessments were made (week 4). Funded by Boehringer Ingelheim.

**Operative Dictation Templates in Obstetrics and Gynecology**

*Holly K. Yettaw, MD*
Detroit Medical Center and Wayne State University School of Medicine, Detroit, Michigan

*Chaim B. Colen, MD, PhD*

**OBJECTIVE:** Electronic medical records (EMR) have become the gold standard in medical documentation and studies have demonstrated that the use of electronic templates improve the accuracy, completeness, and timeliness of operative dictations. In addition, using procedural-specific, preformed operative templates improves compliance with the physician quality reporting initiative (PQRI) and decreases the loss of vital verbiage from an operative note. We hypothesized that despite these supportive facts, operative dictation templates are not adequately available.

**METHODS:** Three major EMR providers were contacted by telephone and email and surveyed regarding the availability of electronic operative templates. Electronic surveys were also sent to residents within the field of obstetrics and gynecology.

**RESULTS:** Electronic templates for obstetrics and gynecology were not readily available through any of the systems and only one system provided electronic templates for general surgery. Surveyed residents in the field of obstetrics and gynecology also expressed a need for further templates. In response to these findings, a novel operative dictation template manual has been developed for obstetrics and gynecology to include templates for more than 50 of the most commonly performed procedures. Each procedural-specific operative template includes common indications for the operation as well as the associated risks, the potential benefits and the goal of surgery. The CPT code for each procedure is also included.

**CONCLUSION:** The use of this manual can improve accuracy, completeness, timeliness, and PQRI compliance and can decrease the loss of vital verbiage.

**ONCOLOGY**

## Morbidity of Partial Gastrectomy in Primary Ovarian Cancer Cytoreduction

*John P. Geisler, MD*
University of Toledo, Toledo, Ohio

*Adam C . Walter, MD; Kelly C. Manahan, MD*

**OBJECTIVE:** To review the indications, procedure, and complications associated with primary gastrectomy in women undergoing primary debulking of ovarian cancer.

**METHODS:** Charts were reviewed to determine all patients undergoing partial gastrectomy during primary debulking of ovarian, peritoneal, or fallopian tube cancer. Charts were also reviewed for perioperative morbidity and mortality, including gastric leak rates.

**RESULTS:** Eleven patients underwent the above named procedure during primary debulking of ovarian cancer. The mean age was 61 years with a mean body mass index of 34. The average postoperative hospital stay was 11 days, with an average estimated blood loss of 600 mL. There was no perioperative mortality. One staple line leak was encountered and was treated without reoperation.

**CONCLUSIONS:** Radical surgery, including partial gastrectomy, can be performed in select patients with primary ovarian cancer to obtain adequate cytoreduction. Acceptable morbidity and mortality can be obtained.

**Rates of Positive Margins and Subsequent Abnormal Cervical Cytology After Excisional Biopsy**

*Charles A. Leath, III, MD*
San Antonio Uniformed Services Health Education Consortium, Fort Sam Houston, Texas

*Beverly G. Reed, MD; Edward Kost, MD; Megan Difurio, MD; Michael Sundborg, MD; William Lowery, MD*

**OBJECTIVE:** To compare margin status and dysplasia persistence rates in a moderate to high-risk population of women per ASCCP 2006 guidelines who underwent loop electrosurgical excision procedure (LEEP) versus cold knife cone (CKC).

**METHODS:** An International Review Board-approved, retrospective review was performed for patients who underwent excisional biopsy from January 2007 to May 2008 at a teaching institution. Pathology was reviewed with margin status determined. In patients with positive margins, subsequent Pap tests results were reviewed to examine the rate of abnormal cytology, a surrogate for dysplasia. Standard statistical tests were used.

**RESULTS:** One hundred ninety-two patients were identified (135 LEEP, 57 CKC). LEEP patients were more likely to have positive margins when compared with CKC patients (39% versus 19%, $P = .01$). Of patients with positive margins, 32/52 of LEEP patients and 7/11 CKC patients had at least 2 follow-up Pap tests available. The overall rate of postprocedure abnormal cytology was 13%. Five of 32 (16%) LEEP patients with positive margins had persistent abnormal cytology, compared with 0 of the 7 (0%) CKC patients ($P = .56$).

**CONCLUSION:** LEEP was more likely than CKC to have positive margins and thus, CKC may be preferred when negative margin status is paramount. Interestingly in this series of higher risk patients, the rate of postprocedure cytologic abnormalities compares favorably to the rate reported in the literature for lower risk patients. Postprocedure compliance with cytology remains problematic and warrants continued evaluation.

**PRIMARY CARE**

## Effectiveness of Treatment With Frovatriptan in Women with Long-Duration Migraine

*Samira Harper, PharmD*
Endo Pharmaceuticals Inc., Chadds Ford, Pennsylvania

*Xiaojun Hu, PhD; John Campbell, BSc; Todd Berner, MD; Leslie Kelman, MD*

**OBJECTIVE:** To evaluate the effectiveness and tolerability of frovatriptan treatment based on baseline migraine duration (short: under 24 h; long: 24–72 h)

**METHODS:** Subgroup analysis of 13,161 female migraineurs treated in primary care settings and prescribed frovatriptan, 2.5 mg, to treat one attack in a multicenter German postmarketing study. Patients recorded headache characteristics, frovatriptan dose, response time, recurrence, satisfaction, and tolerability.

**RESULTS:** At baseline, 57.1% (7,521/13,161) of women reported long-duration and 42.9% (5,640/13,161) reported short-duration migraine. More women with long-duration migraine reported aura (47.0% [3,495/7,443] versus 31.9% [1,774/5,568]), frequent attacks (three or more per month; 56.3% [4,116/7,309] versus 31.2% [1,712/5,482]), severe attacks (62.3% [4,675/7,499] versus 34.2% [1,923/5,624]), and previous triptan use (13.7% [1,032/7,521] versus 8.2% [465/5,640]; $P$ <.001 for each). Mean (standard deviation [SD]) frovatriptan dose was 1.4 (0.6) and 1.2 (0.4) tablets in the long-duration and short-duration groups. Mean (SD) time to onset of frovatriptan effectiveness was less than 50 minutes in both groups. After switching to frovatriptan, women were 27.5-fold more likely to experience decreased rather than increased headache duration ($P$ <.001); 76.4% of women with long-duration headaches with previous therapy reported short-duration headaches with frovatriptan, and 70.7% reported no recurrence. Most women in the long-duration and short-duration groups rated frovatriptan more effective (87.1%−88.6%) and tolerable (69.6%−72.1%) than previous therapy. Most (93%–95%) continued frovatriptan.

**CONCLUSIONS:** A majority of women entered this study with long-duration migraine that recurred with previous treatment; most experienced short-duration and nonrecurring migraine with frovatriptan, and a rapid onset of effectiveness. Most women rated frovatriptan better than previous therapy.

**REPRODUCTIVE ENDOCRINOLOGY/INFERTILITY**

## Monitoring Outcomes of Pelvic Inflammatory Disorder: Trends in Tubal factor Infertility and Ectopic Pregnancy

*Karen W. Hoover, MD, MPH*
Centers for Disease Control and Prevention, Atlanta, Georgia

*Guoyu Tao, PhD; Robert E. Johnson, MD, MPH; Charlotte K. Kent, PhD*

**OBJECTIVE:** In assessing the impact of increasing chlamydia screening and decreasing pelvic inflammatory disease (PID), it is ideal to monitor long-term outcomes of untreated chlamydia. We estimated trends in tubal factor infertility (TFI) and ectopic pregnancy (EP) among commercially insured US women.

**METHODS:** We analyzed a large administrative database with health services claims for 6.8 million women aged 15–44 years in 2007 to estimate time trends in the diagnoses of TFI and EP by 5-year age groups from 2002–2007. Both diagnostic and procedural codes identified cases.

**RESULTS:** We identified 35,230 TFI diagnoses (ratio of 18.7 cases to 1,000 pregnancies) and 11,989 EPs (rate of 6.4 cases per 1,000 pregnancies) during 2002–2007. There was no decreasing trend in either TFI or EP in any age group. Both TFI and EP increased with age: TFI from a ratio of 0.37–60.2 cases per 1,000 pregnancies from ages 15–19 years to 40–44 years; EP from a rate of 2.9–9.8 cases per 1,000 pregnancies over these ages.

**CONCLUSION:** Chlamydia screening rates have increased over the past 9 years in women aged 24 years or younger, but we did not observe a decreasing trend in the diagnoses of TFI and EP among women of any age during 2002–2007. Our data suggest that increased chlamydia screening in the United States is insufficient to have an impact on TFI and EP, that it is too soon to see the impact of screening increases, or that PID contributes less to the outcomes of TFI and EP than previously believed.

**Uterine Artery Embolization for Conservative Management of Advanced Interstitial Pregnancy**

*Hidenori Sasa, MD*
National Defense Medical College, Tokorozawa, Saitama, Japan

*Akio Watanabe, MD; Masashi Takano, MD; Tatsumi Kaji, MD; Kenichi Furuya, MD*

**OBJECTIVE:** Interstitial ectopic pregnancy is a rare condition of pregnancy and may be very dangerous if not identified early and treated urgently. We report a case of successful treatment of an interstitial pregnancy using selective uterine artery embolization (UAE) and systemic methotrexate (MTX) treatment.

**CASE:** A 31-year-old Japanese woman, gravida 1, para 1, was referred for suspected ectopic pregnancy at 10 weeks of gestation. Her initial serum human chorionic gonadotropin (hCG) level was 116,914 milliinternational units/mL, and the transvaginal ultrasound examination showed an empty uterine cavity and a gestational sac of 6 cm in diameter, which was located in the right cornual region, containing no fetal pole or yolk sac. She was treated by selective UAE followed by systemic MTX treatment with informed consent. Her serum hCG level fell to 2,532 milliinternational unit/mL 3 weeks after the therapeutic embolization and transvaginal ultrasonography revealed a gestational sac of 5 cm in diameter. She was given 20 mg of systemic MTX, and her serum hCG level returned to a normal range after eight courses of MTX administrations. The interstitial pregnancy was successfully treated with the preservation of the uterus without the surgical intervention.

**CONCLUSION:** In advanced interstitial pregnancies with high hCG levels, only systemic MTX therapy alone is not expected to be effective. Selective UAE is a minimally invasive and effective method of treatment with the advantage of preserving future fertility.

**ULTRASOUND**

## Thickened Endometrial Lining in Menstruating Women: Is There An Association With Pathology?

*Madeleine B. Courtney-Brooks, MD*
Magee Womens Hospital of the University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania

*Matthew F. Reeves, MD, MPH*

**OBJECTIVE:** To evaluate the risk of endometrial hyperplasia or malignancy in menstruating women with a thickened endometrium on ultrasonography.

**METHODS:** We performed a retrospective review of women aged 55 years and younger, LMP within 1 year, and an endometrial thickness or 1.5 cm or greater on pelvic ultrasonography at a single institution in 2007. Excluion criteria were postmenopausal status, recent pregnancy, postpartum or postabortal status. We obtained results of follow-up ultrasonography and pathology.

**RESULTS:** 340 cases were identified and 33 women were excluded. We examined 307 cases. The mean age was 41.1 years. The median endometrial lining was 1.6 cm. Follow-up was available for 66 (21.6%) by ultrasonography, 92 (30.1%) by pathology, and 52 (17.0%) by pathology and ultrasonograpy. Women who did not have pathology were assumed to not have hyperplasia or malignancy. Two (0.7%) malignancies and 7( 2.3%) instances of hyperplasia were identified. Four risk factors were examined: age, abnormal bleeding as an ultrasound indication, degree of endometrial thickness, and time since LMP. Age of 45 years or older was significant ($P$ = .01), and time since LMP trended toward significance ($P$ = .09) as risk factors for hyperplasia or malignancy. Multivariable logistic regression analysis confirmed that age and time since LMP remained significant ($P$ = .001). These results were confirmed with repeat analysis of the 144 women with pathology available.

**CONCLUSION:** Among menstruating women with an endometrium of 1.5 cm or greater, pathology is rare in women younger than 45 years with an LMP of 60 days or more. Risk is substantially increased in women older than 45 years with an LMP or more than 60 days. One should consider sampling all women older than 45 years with an LMP of more than 60 days.

**First-Trimester Three-dimensional Placental Volume and Vasculature: New Biomarkers of Early Placental Insufficiency?**

*Mona Effendi, MD*
Université Laval, Québec, Canada

*Mario Girard, RT; Katy Gouin, MD; Yves Giguère, MD, PhD; Emmanuel Bujold, MD, MSc*

**OBJECTIVE:** To evaluate the correlation between first-trimester three-dimensional placental volume and vasculature indices with clinical evidences of placental insufficiency.

**METHOD:** A prospective cohort study of women undergoing first-trimester (11–14 weeks of gestation) ultrasonography was performed. Uterine artery Doppler and three-dimensional volume with and without power Doppler were acquired using Voluson E8. Evaluation of the placental volume (cm 3), vascularization index (VI), flow index (FI) and vascularization flow index (VFI) were measurements calculated in triplicates by two independent observers. Spearman's correlation test was used to evaluate intraobserver and interobserver reproducibility. Comparisons were made between women with low (less than 1.5 multiple of median [MoM]) and high (greater than 1.5 MoM) uterine artery Doppler Pourcelot index (PI).

**RESULTS:** A total of 35 women were recruited, including six with elevated uterine artery PI and four with previous preeclampsia (PE). We found an excellent intraobserver and interobserver reproducibility (R-square greater than 0.85) for all parameters. Women with elevated uterine artery PI had a significantly smaller placental volume, VI, FI, and VFI ($P$ <.05) and the indices differences were even greater for women with previous PE.

**CONCLUSION:** Three-dimensional placental volume and vasculature during the first trimester are reproducible measures that inversely correlate to uterine artery PI. They represent very promising techniques to predict disorders characterized by early placental insufficiency and most likely preeclampsia and IUGR.

**Does Chorionic Villus Sampling Increase the Risk of Echogenic Bowel?**

*Boris M. Petrikovsky, MD PhD*
*New York Downtown Hospital/ NYU Medical Center, New York, New York*

*Allan Klapper, MD; Daniel Roshan, MD*

**OBJECTIVE:** Our objective was to determine any association between chorionic villus sampling (CVS) and echogenic bowel, in order to counsel patients with echogenic bowel.

**STUDY DESIGN:** Patients who had CVS between 2006 and 2009 were selected from our database. Patients who had CVS due To AMA or prior genetic history were selected. Patients with abnormal nuchal translucency, evidence of infection, carriers of CF, or other anomalies were eliminated from the study and control group.

Of 420 charts, 311 patients's met the study criteria. 133 patients had transcervical approach, and 118 had transabdominal CVS. For control group, 418 age-matched patients who underwent an amniocentesis at 16–18 weeks of gestation for AMA or prior genetic history were used. Amniocenteses were done by the same primatologist and ultrasound machine, using 22 gauge needles.

All CVS procedures were done by two primatologist with over 7 years experience, using cook catheter for transcervical and 19-gauge or 20-gauge needle for transabdominal CVS, between 11 and 13 weeks. All procedures were done in the prenatal ultrasound unit, using sterile technique under direct ultrasound guidance, using Voluson 730 Expert. Guidance was provided by three experience RDMS ultrasonographers.

Bleeding was seen in in 15% of transvaginal approach and none of the transabdominal CVS at the time of the procedure. Anatomy ultrasonography was done between 18 and 21 weeks on both groups. Echogenic bowel was defined as bone bright or brighter than bone (FEB2 or FEB 3). All anatomy ultrasonography was done using the same ultrasonographers and ultrasound machines. Student *t* test was used for statistical analysis.

**RESULTS:** The incidence of echogenic bowel was as follow:

| | Transvaginal Chorionic Villus Sampling | Transabdominal Chorionic Villus Sampling | Control group |
|---|---|---|---|
| Echogenic fetal bowel | 3% | 0.8% | 0.5% |

**CONCLUSION:** There seems to be higher incidence of echogenic bowel with transcervical CVS. This should be considered when counseling patients with echogenic bowel post CVS.

**The Incidence of Isolated Soft Markers in a Community-Based Hospital**

*Mehdi Parva, MD*
Lankenau Hospital, Wynnewood, Pennsylvania

*Tara Santoroski, DO; Steven Scott, BS RDMS; Anju Suhag, MD; Andrew Gerson, MD*

**OBJECTIVE:** To determine the incidence of isolated soft markers at second-trimester anatomy ultrasound scan on a low risk population with modern ultrasound equipment.

**STUDY DESIGN:** We conducted a prospective review of 310 patients referred to Main Line Health Prenatal Testing Center from January 1, 2007 to January 31, 2009. The presence or absence of the echogenic intracardiac foci, renal pyelectasis, choroid plexus cyst, sandal gap, and appearance of fith digit middle phlaynx were recorded for low risk patients. The inclusion criteria included uncomplicated singleton pregnancy, aged less than 35 years, normal or no sequential screening, and no family history or prior history of chromosomal or nonchromosomal abnormalities. Ultrasonographry was performed using GE-Voluson E8 ultrasound machine.

**RESULTS:** The mean age of patients was 26 years (rage, 17–36 years). The median gestational age was 20 weeks (range, 17–24 weeks). Total of incidence of all isolated soft makers was 22% (69/310). 44 (14%) patients were found to have echogenic intracardiac focus. 14 (5%) patients had pyelectasis, and 11 (4%) were found to have choroids plexus cyst. No abnormal sandal gap and fifth digit middle phlaynx were identified. 78% (241/310) of patients had no abnormal findings on ultrasound. No invasive testing was performed.

**CONCLUSION:** In our study the incidence of isolated soft markers were found to be 22%. Thus, ultrasonography performed with modern equipment has a substantial chance of creating anxiety in low-risk patients. Therefore, clinicians must consider careful disclosure of the information as chances are great that the fetus is normal.