**Update on Contraception**

Does immediate postpartum insertion of a contraceptive implant reduce the repeat pregnancy rate in teens? What makes the copper IUD the best emergency contraceptive? How does hysteroscopic sterilization compare with the laparoscopic approach?

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Unintended pregnancy remains an important public health priority in the United States. Correct and consistent use of effective contraception can help women achieve appropriate interpregnancy intervals and desired family size, whereas inconsistent or non-use of contraceptive methods contributes to the majority of unintended pregnancies.

Long-acting reversible contraceptive (LARC) methods, such as implants and intrauterine devices, have effectiveness rates similar to those of permanent sterilization, and these methods are becoming more popular among American women. The proportion of women using LARC methods increased from 2.4% in 2002 to 8.5% in 2009.1

Sterilization continues to be a common method of contraception, with 32% of women relying on female or male sterilization in 2009.1 For women who are not using contraception regularly or who experience a failure in their method, emergency contraception is a viable back-up plan.

In this article, we will review the latest data on contraceptive efficacy in three different contexts:

* implant placement in the immediate postpartum period
* emergency contraception (EC) with the copper intrauterine device (IUD)
* sterilization via hysteroscopic versus laparoscopic approaches.

Immediate postpartum placement of the contraceptive implant saves money

*Tocce KM, Sheeder JL, Teal SB. Rapid repeat pregnancy in adolescents: Do immediate postpartum contraceptive implants make a difference? Am J Obstet Gynecol. 2012;206(6):481.e1–e7.*

*Han L, Teal SB, Sheeder J, Tocce K. Preventing repeat pregnancy in adolescents: Is immediate postpartum insertion of the contraceptive implant cost effective? [published online ahead of print March 11, 2014]. Am J Obstet Gynecol. doi:10.1016/j.ajog.2014.03.015.*

Although teen birth rates have been declining in the United States in recent years, repeat teen births still pose significant health and socioeconomic challenges for young mothers, their children, and society. Adolescent mothers face barriers in completing their education and obtaining work experience. Repeat teen mothers are also more likely to experience adverse pregnancy outcomes, including preterm birth or delivery of a low-birth-weight infant. Families of adolescent mothers are not the only ones who are affected by teen childbearing. In fact, US taxpayers spend about $11 billion each year on costs related to teen pregnancy.2

The immediate postpartum period is a time when effective LARC methods can be initiated to decrease the risk of rapid repeat pregnancy.

Details of the study by Tocce and colleagues
Tocce and colleagues report the results of a prospective observational study that compared adolescents who chose postpartum etonogestrel implant insertion with those who elected to use no contraception or initiate contraception at the usual interval (condoms, depot medroxyprogesterone acetate, and progestin-only pills at any time after delivery, combined hormonal contraception after 4 weeks postpartum, implant insertion after 4 weeks postpartum, and intrauterine device placement at 6 weeks after delivery).

Of adolescents who chose immediate postpartum implant placement, 88.6% were still using this method at 12 months postpartum. In comparison, only 53.6% of adolescents in the control group were using a highly effective contraceptive method at 12 months postpartum (**TABLE**).

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| **Use of highly effective contraception in adolescents 12 months after delivery** |
| Contraceptive method  | Immediate postpartumimplant (n = 149)  | Control\* (n = 166)  |
| Implant | 132 (88.6%) | 35 (21.1%) |
| Intrauterine device  | 6 (4.0%)  | 51 (30.7%)  |
| Female sterilization  | 0 |   3 (01.8%)  |
| Total using highly effective method†  | 138 (92.6%)  | 89 (53.6%)  |
| **\* The control group consisted of women who elected to use no contraception or initiate contraception at the usual postpartum interval (condoms, depot medroxyprogesterone acetate, and progestin-only pills at any time after delivery, combined hormonal contraception after 4 weeks postpartum, implant insertion after 4 weeks postpartum, and intrauterine device placement at 6 weeks after delivery).** **† *P*<.0001, Fisher exact test.** **Adapted from: Tocce KM, Sheeder JL, Teal SB. Rapid repeat pregnancy in adolescents: do immediate postpartum contraceptive implants make a difference? Am J Obstet Gynecol. 2012;206(6):481.e1–e7.** |

The difference in *repeat* pregnancy rates was even more compelling. At 12 months postpartum, the pregnancy rate was 2.6% for women who had chosen an immediate postpartum implant, compared with 18.6% in the control group (*P*<.001).

One significant barrier to immediate postpartum LARC placement is reimbursement policies; hospitals are reimbursed a single global fee for all of the hospital care, so insertion of an expensive contraceptive implant during the hospital stay is not reimbursed. However, if a woman returns to the office for insertion, the provider receives full reimbursement if she has coverage for the product.

A look at cost effectiveness
With this in mind, Han and colleagues determined the cost effectiveness of immediate postpartum implant placement using the results from the observational study from Tocce et al. The costs of implant insertion and removal were calculated, as well as the costs associated with various obstetric or gynecologic outcomes, including prenatal care, vaginal or cesarean delivery, infant medical care for the first year of life, and management of ectopic pregnancy or spontaneous miscarriage. The contraceptive costs for the comparison group were not included in the analysis because these costs would represent baseline contraceptive costs incurred by Medicaid.

Significant cost savings were found with immediate postpartum implant placement over time; specifically, $0.78, $3.54, and $6.50 were saved for every dollar spent at 12, 24, and 36 months, respectively. To be clear, this analysis was limited to contraceptive implant placement, and cannot be directly applied to immediate postpartum intrauterine device insertion.

What this evidence means for practice
Among adolescents who received immediate postpartum implant placement, contraceptive continuation rates were higher and repeat teen birth rates were lower, translating into overall cost savings for state Medicaid programs. Furthermore, young mothers and their families also experience health, social, and economic benefits from a delay in childbearing.
In accordance with the findings of Han and colleagues, the South Carolina Medicaid program is the first to implement reimbursement for inpatient postpartum LARC insertion. Other states should evaluate their own policies for inpatient LARC reimbursement and take into consideration the potential for cost savings

More evidence suggests the copper IUD is the preferred emergency contraceptive

*Turok DK, Jacobson JC, Dermish Amna I, et al. Emergency contraception with a copper IUD or oral levonorgestrel: An observational study of 1-year pregnancy rates. Contraception. 2014;89(3):222–228.*

Several options for EC exist, but only the copper IUD also can be continued as an effective method of contraception. Despite its dual roles in pregnancy prevention, the copper IUD remains underutilized, compared with oral EC methods. Women who seek EC are motivated to reduce their risk of pregnancy. However, they may not be receiving the most effective method to avoid pregnancy. A survey of 816 emergency contraception providers revealed that 85% of respondents had never offered the copper IUD as a method of EC to their patients.3 This represents a lost opportunity, as the copper IUD would be ideal for women who desire an effective form of EC that also can be continued as contraception.

Details of the trial
Turok and colleagues conducted a prospective observational trial comparing oral levonorgestrel (LNG) with copper IUD insertion in women seeking EC. Women who were interested in participating received scripted counseling on both methods and were given their desired method free of charge.

In this study, almost 40% (215/542) of women chose the copper IUD for EC. However, the providers in this study were unable to place the IUD in 20% of these women. The women who chose not to receive an IUD or who did not have an IUD placed received LNG EC.

There were four pregnancies from EC failures in the first month in the LNG group, compared with none in the IUD group. After 1 year, the risk of pregnancy in women who chose the copper IUD (including the women who were unable to have the device placed) was lower than in women who chose LNG (odds ratio [OR], 0.50; 95% confidence interval [CI], 0.26–0.96).

In an analysis based on the actual method received, the risk of pregnancy in the IUD group was even lower (OR, 0.38; 95% CI, 0.18–0.80).

At 1 year, 60% of women in the copper IUD group were using a highly effective method of contraception, specifically an IUD, implant, or sterilization, compared with 10% in the LNG group.

What this evidence means for practice
When given the option, almost 50% of women chose the copper IUD to reduce their risk of pregnancy. Women who received a copper IUD were more likely to be using a highly effective method of contraception and less likely to experience an unintended pregnancy at 1 year than women who chose LNG EC.
We need to counsel our patients on the differences in efficacy between the methods and offer copper IUDs to eligible women.

Hysteroscopic sterilization may not be as effective as we thought

*Gariepy AM, Creinin MD, Smith KJ, Xu X. Probability of pregnancy after sterilization: A comparison of hysteroscopic versus laparoscopic sterilization [published online ahead of print April 24, 2014]. Contraception. doi:10.1016/j.contraception.2014.03.010.*

Since its introduction in 2002, hysteroscopic sterilization has become a popular method of sterilization. It has many potential advantages over laparoscopic sterilization, including the ability to perform the procedure in an office setting without general anesthesia or abdominal incisions. However, there are also disadvantages to hysteroscopic sterilization, as we pointed out in this Update last year, such as a risk of unsuccessful procedure completion on the first attempt and the need for contraception until tubal occlusion is confirmed.

There are limited data on the effectiveness of hysteroscopic sterilization, and there are no prospective studies comparing hysteroscopic and laparoscopic sterilization. Given the rare outcome of unintended pregnancy with both procedures, based on published literature, a prospective study is unfeasible. An inherent weakness of large clinical trials or retrospective reports of hysteroscopic sterilization success is that only women who had successful completion of the procedure can be included. Two recent reports that demonstrate that completed hysteroscopic sterilization procedures are highly effective highlighted this “weakness.”4,5 However, these data do not reflect “real-life” practice; there are no intent-to-treat data on pregnancy rates among women who choose this option but are unable to fully complete the procedure.

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