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Levonorgestrel Release Rates With LNG20, a New Levonorgestrel Intrauterine System [186]

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health care provider level of training were all obtained from the electronic medical record. Primary outcome was IUD expulsion at the follow-up appointment. Univariate analysis was performed for each exposure with expulsion odds ratios calculated and significance determined using Fisher's exact test or χ^2 analysis. In addition, a multivariate logistic regression model was performed to identify a combination of risk factors that would best predict IUD expulsion outcome.

RESULTS: Of the 221 women included in the cohort, outcome data were available for 184. Intrauterine device expulsions occurred in 24 patients. Body mass index greater than 35, adenomyosis, and IUD insertion for hyperplasia or early cancer were all individually associated with significantly increased risk of expulsion. Using a multivariate logistic regression model for expulsion, six composite variables (insertion in the operating room, BMI, health care provider level of training, preprocedural use of ibuprofen, abnormal uterine bleeding, and hyperplasia or early cancer as an indication) were found to be the most significant contributors to IUD expulsion. This model was used to develop an expulsion odds risk calculator with a sensitivity of 66.7%, specificity of 83.3%, and 75% accuracy.

CONCLUSION: Risk of IUD expulsion is multifactorial and a combination of health care provider, patient, and technical-related factors can be used to calculate a patient's individual risk of expulsion. More studies need to be done to validate this model in other populations.

Financial Disclosure: The authors did not report any potential conflicts of interest.

Postpartum Contraceptive Choice Among Patients After High-Risk Pregnancy [185]

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OBJECTIVE: Half of pregnancies in the United States are unintended. We hypothesized a high-risk pregnancy might represent a "teachable moment" regarding contraceptive options.

METHODS: This was a retrospective study of women delivering at a university hospital during 2009–2010 who received prenatal care in the faculty or resident clinics. High-risk status was defined by Society of Maternal-Fetal Medicine guidelines; subject categorizations were agreed on by all authors. Documentation of contraceptive plan was abstracted from clinic and hospital records. Subsequent pregnancies through 2012 were abstracted. χ^2 tests assessed correlations between risk status and both contraceptive choice and subsequent pregnancy. Binary logistic regression was performed for the outcomes of Tier 1 contraceptive choice at last contact and for subsequent pregnancy during the follow-up period.

RESULTS: A total of 3,063 women were included, 2,048 low risk and 1,015 high risk. The index pregnancy was slightly more likely to be unintended among low-risk than high-risk women (48% compared with 43%, $P=.02$). When contraceptive methods were categorized according to World Health Organization tiers, intention to use tier 1 (most effective) contraceptives was high for both groups antepartum (54% low risk compared with 58% high risk), slightly decreased at hospital discharge (42% compared with 51%, $P<.001$), and significantly decreased postpartum (27% compared with 32%, $P=.004$). During follow-up, 656 women (21.4%) had a second pregnancy lasting more than 20 weeks. These were unintended among 36.6% of low-risk and 32.4% of high-risk women, which was not statistically different.

CONCLUSION: Women experiencing high-risk pregnancy were no more likely to have planned their index pregnancy. Although their uptake of highly effective contraception was higher immediately postpartum, they were as likely to have an unplanned pregnancy during follow-up. New strategies are needed to counsel all women about pregnancy planning and contraception.

Financial Disclosure: Dr. Gossett is a consultant to Bayer Pharmaceuticals. The other authors did not report any potential conflicts of interest.

Levonorgestrel Release Rates With LNG20, a New Levonorgestrel Intrauterine System [186]

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INTRODUCTION: LNG20, a new levonorgestrel intrauterine system, is currently being investigated in a phase 3 study for contraception. The objective was to evaluate levonorgestrel ex vivo release rate over 3 years of LNG20 use.

METHODS: Levonorgestrel release rate was estimated by comparing the average initial levonorgestrel content and the residual levonorgestrel content of expelled or removed systems. The initial levonorgestrel content analysis was performed on 10 random samples at lot release. The estimated release rate was determined by residual drug content analysis of 74 samples that were removed or expelled during the phase 3 study. Residual drug content analysis was performed on six or more samples in each 90-day interval through 2.5 years and six samples between 2.5 and 3 years. A first-order exponential model was used to determine the average rate of change of levonorgestrel content over time. The best-fit curve for the change in levonorgestrel content over time was used to estimate the release rate at 0, 1, 2, and 3 years.

RESULTS: The average initial levonorgestrel content was 52.0 ± 1.8 mg with an initial release rate of 18.6 micrograms per day. The estimated average release rate at 1, 2, and 3 years of use was 16.3, 14.3, and 12.6 micrograms per day, respectively. The average cumulative release was 6.4, 12.0, and 16.9 mg (12%, 23%, and 33% of the initial loading), respectively.

CONCLUSION: LNG20 releases levonorgestrel at a rate that is comparable with known intrauterine systems containing 52 mg levonorgestrel.

Financial Disclosure: Drs. Gopalakrishnan, Liu, and Gobburu received research support from Medicines360. Dr. Creinin received research support from Medicines360 and Merck and has received honoraria and served as a consultant for Merck.

Are There Economic Influences on Choice for Sterilization by Minority Women in an Inner-City Hospital? [187]

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INTRODUCTION: Female sterilization is one of the most widely used methods of family planning by women in general and minorities in particular. Few articles have looked at the effect of economic changes on the decision to undergo sterilization by minority women.

METHODS: This is a retrospective study of women admitted to our service from January 1, 2007, to December 31, 2012, who received permanent sterilization in the postpartum period. Rates of tubal sterilization were compared with unemployment rates obtained from the Bureau of Labor Statistics.

RESULTS: Approximately 2 years into the recession, deliveries continued to rise but dropped off as the recession deepened before its peak in 2010 and continued to do so for another year before rising again as the economy recovered employment. However, the rate of tubal ligations fell early on, declining steadily from 7.75% in 2007 to 2.81% in 2010. This mirrored inversely the steady rise of unemployment of 4.6–9.7% in those years. From then on, as unemployment improved, the number of tubal ligations increased (7.37% in 2011, and 5.60% in 2012).

CONCLUSION AND IMPLICATION: Although it has been reported that in periods of economic declines fertility rates trend down, the findings of this study that permanent sterilizations are reduced in economic depression is interesting. We would speculate that in a population with a limited number of wage earners, the loss of wages is significant enough to postpone the choice for sterilizations. This study is limited to one institution, and further work should expand these findings.

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