Original Study

Early Initiation of Postpartum Contraception: Does It Decrease Rapid Repeat Pregnancy in Adolescents?

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A B S T R A C T

Study Objective: Rapid repeat adolescent pregnancy is a significant public health concern. An effective and practical means of decreasing unintended second adolescent pregnancies needs to be identified. The objective of this study is to determine if early initiation of contraception, and in particular long acting reversible contraception (LARC), decreases rapid repeat pregnancy among first time adolescent mothers.
Design: Retrospective cohort study.
Setting: Urban teaching hospital.
Participants: 340 first-time adolescent mothers age ≤ 19.
Interventions: None, study was retrospective.
Main Outcome Measures: Repeat pregnancy within 2 years.
Results: 340 first time adolescent mothers with a documented follow-up time of 2 years had a repeat pregnancy rate of 35%. Average time from delivery to repeat pregnancy was 9.9 ± 6.4 months. Logistic regression analysis comparing adolescents with and without repeat pregnancy revealed that leaving the hospital postpartum without initiating any contraception was associated with significant increase risk of repeat pregnancy (OR = 2.447, 95% CI 1.326-4.515). Follow-up within 8 weeks postpartum was associated with lower chance of repeat pregnancy (OR = 0.322, 95% CI 0.172-0.603). Initiation of a LARC method (either an intrauterine device or etonogestrel subdermal implant) by 8 weeks postpartum was also associated with decreased chance of rapid repeat pregnancy (OR = 0.118, 95% CI 0.035-0.397).
Conclusion: Adolescent mothers who initiate a LARC method within 8 weeks of delivery are less likely to have a repeat pregnancy within 2 years than those who choose other methods or no method. First time adolescent mothers should be counseled about this advantage of using LARC.
Key Words: Adolescent pregnancy, Contraception, Long acting reversible contraception, Intrauterine device, Subdermal contraceptive implant, Unintended pregnancy

Introduction

Adolescent pregnancy has declined in the United States in recent years, but rates are still higher than in most industrialized nations.[1] Rapid repeat pregnancy is also very common with up to 50% of adolescent mothers becoming pregnant again within 2 years.[2] In 2010, 18.3% of the 364,859 births to adolescents age 15-19 years were repeat births.[3] Adolescents who give birth to a second child are less likely to return to school or become economically self sufficient.[4] Rapid repeat pregnancy in adolescent mothers perpetuates the cycle of poverty and is a significant public health concern. Teen childbearing cost United States taxpayers $9.4 billion in 2010 based on cost of health care, services for the children, and lost tax revenue.[5] There is also evidence that second births to adolescent mothers are more likely to be preterm and of low birth weight.[6,7]

Long acting reversible contraception (LARC) includes intrauterine devices (IUDs) and the etonogestrel subdermal implant. Early use of LARC can dramatically reduce repeat pregnancy rates within the first 2 years postpartum as shown in several studies evaluating the subdermal implant.[8,9,10] Unfortunately, adolescent mothers are frequently prescribed oral contraceptive pills (OCP) which are discontinued at a rate of up to 50% by 6 months postpartum.[11] The most common forms of contraception used by teenagers are condoms, withdrawal, and OCPs.[12] Adolescent OCP users have higher contraceptive failure rates than adult OCP users and are less likely to adhere to the daily pill regimen.[13,14]

Identifying potential interventions to prevent a second unintended pregnancy for young adolescent mothers is important. Adolescent mothers who use contraception in the puerperium are less likely than those who delay contraception to become pregnant within 2 years.[9] LARC methods have low discontinuation rates and are highly effective at preventing pregnancy.[15] These methods can be

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safely used in adolescents and their availability to this age group is encouraged by the American College of Obstetrics and Gynecology.[16] Adolescents have high twelve-month continuation rates of LARC methods, similar to adults, but higher discontinuation rates than adults for non-LARC methods.[17]

The goal of this study is to determine if initiation of contraception immediately postpartum prevents rapid repeat pregnancy in an urban adolescent population. While previous studies of LARC to prevent repeat adolescent pregnancy have focused on the subdermal implant,[8,9,10] we chose to study the initiation of any LARC device (IUD or implant) in the postpartum period. We hypothesize that early initiation of contraception, specifically LARC methods, results in fewer rapid repeat pregnancies among first time adolescent mothers.

Materials and Methods

A retrospective chart review was conducted to identify adolescents (age ≤ 19 years old) who received prenatal care and delivered their first child at our institution over a 2-year time period from January 1, 2008, through December 31, 2009. Patients who were ≤ 19 years old at time of delivery, received prenatal care at either the OBGYN clinic (staffed by OBGYN residents, a nurse practitioner and certified nurse midwives) or with the associated faculty private practice group at our institution, had a live birth at 24 weeks or later gestational age, and for which the index birth was the patient's first live and viable birth were included. Any patients who received care with an outside clinic or provider or who did not receive any prenatal care were excluded. Fetal demise and pre-viable deliveries (<24 weeks gestational age) were also excluded. Clinic prenatal charts and inpatient records were reviewed for demographic data, location and number of prenatal visits, prenatal contraception counseling, delivery information, evidence of social work involvement during prenatal care, and involvement in a specialized teen pregnancy program, Teen Alliance for Prepared Parenting (TAPP). One of the primary goals of TAPP is to prevent unintended repeat pregnancy. Expectant mothers enrolled in TAPP are assigned to a specific social worker who meets with the adolescent at each prenatal visit to help her navigate a variety of social services, calls the patient at home to remind her of visits, and provides additional counseling about contraceptive options.[18] The inpatient record was reviewed for documentation of postpartum contraception plan and any evidence of administration of a contraceptive agent on the postpartum ward prior to discharge. At the time of this study, the only contraceptive agent that was available through the inpatient pharmacy to be administered to patients was depot medroxyprogesterone acetate (DMPA). The clinic charts were then reviewed for number and timing of postpartum visits, postpartum contraceptive plan, and administration of contraceptive agents in the clinic. Finally, both inpatient and outpatient electronic charts were reviewed for evidence of repeat pregnancy within the 2 year period following delivery of the index pregnancy. This was determined based on reviewing any follow-up clinic visits, emergency room visits, future labor and delivery visits, or other hospital records that indicated obstetric and gynecologic history. If it could not be determined if a patient did or did not experience a repeat pregnancy within 2 years due to lack of follow-up visits or insufficient information in the record, the patient was excluded from the study.

Adolescents who had a repeat pregnancy within 2 years of their initial delivery were compared to those who did not have a repeat pregnancy during the follow-up period. The data was analyzed for predictors of repeat pregnancy, including compliance with prenatal care, social work involvement, early initiation of contraception, and initiation of LARC methods within 8 weeks postpartum. LARC methods were defined as either IUDs (levonorgestrel or copper T380 A) or the etonogestrel subdermal implant (Implanon).

SAS 9.1 (SAS Institute, Cary, NC) was used for statistical analysis. Descriptive statistics, Fisher exact test, and chi-square tests were used for the univariable analysis. Multivariable logistic regression analysis was performed for significant variables ($P < .05$). Kaplan-Meier curves were obtained for event defined as repeat pregnancy, time measured in days. Log rank test was used for comparison between 2 Kaplan-Meier curves. The time period of 2 years was selected in order to obtain at least 266 patients needed to detect a 15% difference in repeat pregnancy rates with an alpha of 0.05 and power of 80% between those patients with early initiation of contraception and those who did not initiate contraception early. Institutional review board approval was obtained from the Medstar Health Research Institute for this protocol.

Results

During the study period of January 1, 2008 through December 31, 2009, there were a total of 9,063 deliveries at our institution. Of those, 1,439 were to adolescent mothers age ≤ 19 years old, and of those 419 were first time mothers who received their prenatal care within our institution. Of these adolescent mothers, 79 were lost to follow-up over 2 years leaving a total of 340 first time adolescent mothers followed for 2 years post-delivery.

Baseline demographics and characteristics of the 340 first time adolescent mothers included in our study are shown in Table 1. Study patients ranged in age from 13 to 19 years old with a mean age of 17.42 ± 1.36. The mean gestational age at time of delivery was 39.08 ± 2.24 weeks (range 25.6-42.3 weeks). The vast majority were African American (92.35%), 87.36% had public insurance (Medicaid or other state sponsored insurance), and 48.24% were enrolled in a TAPP. Most of the patients (89.12%) received their care in the staff clinic and 12.35% in the faculty private clinic. Social work was involved prenatally in 52.35% of cases. In review of delivery data, 65% delivered by normal spontaneous vaginal delivery, 11.5% by operative vaginal delivery, and 23.5% by cesarean section. A documented contraception discussion was found in 79.06% of the prenatal charts. At time of discharge from the hospital postpartum, 29.12% of patients had no contraception plan documented, 27.35% planned to use DMPA, 19.12% planned