

Original article

Adolescent Pregnancies: Maternal and Fetal Outcomes

Candan İltemir DUVAN, Nilgün Öztürk TURHAN, Yüksel ONARAN, İlknur İnegöl GÜMÜŞ, Hilal YUVACI, Elif GÖZDEMİR

Fatih University Faculty of Medicine Department of Obstetrics and Gynecology, ANKARA

ÖZET

Adolesan gebelikler: Maternal ve fetal risk faktörleri
Adolesan gebelikler biyolojik imatürite, istenmeyen gebelik, yetersiz perinatal bakım, zayıf maternal beslenme ve stres gibi nedenlerden etkilenen olumsuz obstetrik ve neonatal sonuçları olan bir problemdir. Türkiye'deki adolesan gebeliklerin obstetrik ve neonatal sonuçları ile ilgili yapılmış sınırlı sayıda çalışma olmasını göz önünde bulundurarak biz de hastanemizdeki adolesan gebelerin obstetrik ve neonatal sonuçlarını inceledik. Altmışsekiz adolesan kadın ile yaşları 19'un üzerinde olan 409 kadının kayıtlarını karşılaştırdık. Veriler adolesan gebelerin erken doğum açısından yüksek risk altında olduğunu gösterdi. Ayrıca sezaryen ile doğum, müdahaleli vajinal doğum ve makrozomi açısından adolesan gebeliklerin düşük risk taşıdığını tespit ettik.

Anahtar Kelimeler: Adolesan, gebelik, erken doğum

ABSTRACT

Adolescent pregnancy has longly been a problem with adverse obstetric and neonatal outcomes being influenced by biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition, and stress. Considering limited number of study regarding the maternal and perinatal outcome of adolescent pregnancies in Turkey, we aimed to review obstetric and neonatal outcomes in adolescent pregnant women in our hospital. We compared 68 adolescence women with 409 records of women with the age higher than 19 years. Our data showed that adolescent pregnancies were at increased risk of preterm delivery. We also observed that adolescent pregnancy was associated with lower risks of cesarean delivery, operative vaginal delivery and macrosomia.

Key Words: Adolescent, pregnancy, preterm delivery

INTRODUCTION

Adolescence means a transitional stage of physical and mental human development, involving biological, social and psychological changes, occurs between 10-19 years of age as The World Health Organization (WHO) suggested. Pregnancy in this transitional stage is a common public health problem and social phenomenon with medical consequences worldwide. In this context adolescent pregnancy has longly been a problem with adverse obstetric and neonatal outcomes being influenced by biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition, and stress. Socio-economic, cultural, geographic and racial factors are also associated with teenage pregnancy and poor pregnancy outcome¹⁻³.

Considering limited number of study regarding the maternal and perinatal outcome of adolescent pregnancies in Turkey, we aimed to review obstetric and neonatal outcomes and risk factors in adolescent pregnant women and to compare perinatal outcomes among the adolescent group and adult group.

MATERIALS AND METHODS

The data regarding maternal and fetal characteristics was collected from the records of 477

pregnant women being admitted and delivered in Fatih University Obstetrics and Gynecology Clinic. The adolescent age group was defined as young women with the age below than 19 years. We compared 68 adolescence women with 409 records of women with the age higher than 19 years. Birth records and patients files were reassessed in terms of their demographic characteristics including maternal age, gravidity, parity, body mass index (BMI), and their first visit to hospital. Patients' labor characteristics including; gestational age at delivery, mode of deliveries and antenatal obstetric complications such as preterm labor, preeclampsia, gestational diabetes, intra-uterine growth retardation, oligohidramnios and neonatal outcome parameters (birthweight and Apgar scores in 1. and 5. minutes of newborns) were compared. Also we recorded the incidence of normal and cesarean deliveries in the women and compared these with the rates of adults.

Data analysis was performed by using Statistical Package for Social Sciences (SPSS) version 11.5 software (SPSS Inc., Chicago, IL, United States). Whether the continuous variables were normally distributed or not was determined by Shapiro Wilk test. Data was shown as mean±standard deviation or median (minimum-maximum) for continuous

data, where applicable. While, the mean differences were compared by Student's t test, otherwise, Mann Whitney U test was applied for the comparison of the median values. Nominal data were analyzed by Pearson Chi-square or Fisher's exact test, where appropriate. A p value less than 0.05 was considered statistically significant.

RESULTS

Median age of adolescent pregnant women was 19 years (16–19), median age of adult pregnant was 28 years (20–41). All of the adolescent pregnant women were married, 88% were nulligravidae, 8% were in their second pregnancy, 4% were in their third pregnancy. The demographic characteristics including maternal age, gravidity, parity, prepregnancy and postpregnancy BMI, first prenatal visit and weight gain during pregnancy in both groups were recorded (Table 1). In the adolescence group, the median maternal age was significantly lower than that of adult group. The prepregnancy BMI were 22.06 ± 3.28 , 23.83 ± 3.86 in the adolescence and adult group, respectively. The post pregnancy BMI was 26.93 ± 3.23 , 29.35 ± 4.1 in the adolescence and adult group, respectively. Both the prepregnancy BMI and the post pregnancy BMI of adolescents are lower than that of adult groups ($P < 0.05$). In addition, first prenatal visit during pregnancy is significantly later in adolescence group (20.14 ± 12.84) than

that of adult group (14.99 ± 9.47) ($p < 0.05$). Table 2 presents mean gestational age at delivery, mode of delivery, birthweights and 1. and 5. minute Apgar scores of the newborns in the adolescent and adult groups. The mean gestational age at delivery and Apgar scores at the 1st and 5th minutes was not significantly different in the newborns of the adolescent group and adult group ($P > 0.05$). However, the mean birth weight of newborns 3197 ± 569 gr (range 850 to 4140 g) was significantly lower in adolescence group compared with adult group ($p < 0.05$). The ratio of cesarean delivery in the adolescent group was significantly lower than that of the adult group (36.7% vs 51.4%). The ratio of the operative delivery with vacuum extraction or forceps was 3.6% in the adult group while there was no operative delivery in the adolescent group. Indications of cesarean section in the adolescent and adult groups were presented in Table 3. Regardless of the previous cesarean section, the ratio of cephalopelvic disproportion as indication for cesarean section was significantly higher in adolescent group than that of the adult group ($P < 0.05$). Table 4 presents the ratio of the obstetric complications in the adolescent and adult groups. The ratios of preterm labor in the adolescent group were significantly higher than those of the adult group. The ratios of fetal macrosomia are significantly lower than that of adult groups ($P < 0.05$).

Table 1. Demographic characteristics of the adolescent and adult pregnant women

	Adolescent (n=68)	Adult (n=409)	P value
Age (median)	19*(16-19)	28 (20-41)	<0.05
Gravida (median)	1(1-3)	2 (0-9)	NS
Parity (median)	1(0-1)	1 (0-5)	NS
Nulliparity (%)	88.2*	41.1	<0.05
BMI prepregnancy (mean±SD)	$22.06 \pm 3.28^*$	23.83 ± 3.86	<0.05
BMI postpregnancy (mean±SD)	$26.93 \pm 3.23^*$	29.35 ± 4.1	<0.05
First prenatal visit (mean±SD)	$20.14 \pm 12.84^*$	14.99 ± 9.47	<0.05
Weight gain (mean±SD)	14.27 ± 5.85	14.63 ± 4.36	NS

Data was presented as median (min-max), mean±SD, * $P < 0.05$

Table 2. Obstetric outcomes and characteristics of patients

	Adolescent (n=68)	Adult (n=409)	P value
Gestational age at delivery	38.43 ± 2.5	38.34 ± 2.57	NS
Mode of delivery (%)			
Normal	62.1	48.6	<0.05
Cesarian delivery	37.9	51.4	<0.05
Apgar score 1 st minute	8.6 ± 0.9	8.7 ± 1.7	NS
Apgar score 5 th minute	9.8 ± 0.4	9.7 ± 0.7	NS
Birthweight (kg)	3197 ± 569	3455 ± 569	<0.05

Data was presented as mean±SD, $P < 0.05$

Table 3. Indication for cesarian section in the groups

	Adolescent (n=25)	Adult (n=154)
Cephalopelvic disproportion	32* (8)	14.3 (22)
Fetal distress	28 (7)	17.5 (27)
Previous cesarian section	16* (4)	32.5 (50)
Breech presentation in the primigravida	8 (2)	3.9 (6)
Multiple pregnancy	4 (1)	3.9 (6)
Transverse-oblique presentation	0	1.3 (2)
Macrosomia	8 (2)	10.4 (16)
Other indication	1.4 (1)	1.5 (25)

*P<0.05

Table 4. Obstetric complications in the adolesant and adult groups

	Adolescent (n=68)	Adult (n=334)
Premature delivery	18.5 (12)*	8.7 (29)
Preeclampsia	4.4 (3)	1.8 (6)
Placental abnormalities	1.4 (1)	1.8 (6)
Intrauterine growth retardation	2.9 (2)	6.4 (21)
Macrosomia	7 (5)	4.7 (16)
Gestastational diabetes	2.9 (2)*	10 (34)

*P<0.05

DISCUSSION

In this study, we compared the obstetric and neonatal outcomes of adolescent pregnancies with adult pregnancies. Our study showed that adolescent pregnancies were at increased risk of preterm delivery. We also observed that adolescent pregnancy was associated with lower risks of cesarean delivery, operative vaginal delivery and macrosomia. Compared with adult pregnancy, adolescents were not at increased risk of preeclampsia, placental anomalies, intrauterine growth retardation and gestational diabetes mellitus.

It is reported that a majority of adolescent pregnant women are unmarried due to low socioeconomic status, approximately 90% of all adolescent pregnancies are unplanned, and a great amount of unplanned adolescent pregnancies are unintended⁴⁻⁶.

Beside the inadequate epidemiologic data and literature regarding adolescents pregnancies in Turkey, it is declared that the facts regarding Turkish adolescent pregnancies seem different from other countries related to ethnic and socio-cultural differences. Especially, in Turkey, most adolescent pregnant women are married and well supported by their families. Hence, most of their pregnancies are planned and intended⁷.

Although the results of most previous studies evaluating adolescent pregnancy on perinatal outcome and its obstetric risks seem controversial. But there is a general agreement that adolescent pregnancy is associated with high risk of serious obstetric complications and poor neonatal outcomes such as abortion, preterm

delivery, preeclampsia, significant anemia, and mechanical and operative delivery⁸⁻¹⁰.

In our study, we dealt with the adverse pregnancy outcomes of adolescent mothers admitted to our hospital. Increased risk for preterm delivery and fetal distress were detected at birth in pregnancies of adolescent mothers. Since the reasons for these complications are due to both biological factors and sociodemographic factors often influencing adolescent pregnancy outcome, it is difficult to establish the etiology of adverse perinatal outcome in adolescent women^{11,12}. We found the fact that the risk of preterm deliveries (<37 weeks) in adolescent pregnant women is higher compared to the adult group consistent with the literature^{13,14}. Although we have not screened the mechanisms associated with preterm labor which are not known well, the association between smoking and lower socioeconomic status and genital tract infections (the bacterial vaginitis, urinary tract infection and preterm labor) is confirmed by findings from other studies^{15,16}.

Since the lack of early and adequate prenatal care is a serious problem in adolescent pregnancies, adequate prenatal care is important to reduce the adverse effects of adolescent pregnancy, neonatal risks and complications by providing multidisciplinary care and guidelines^{11,12}. Accordance with these reports, our study demonstrated that adolescent pregnant women have visited the hospital later than the adult group as the first prenatal visit weeks are 20.14±12.8 for adolescent pregnant, 14.99±9.47 for control group (p<0.05). There are still controversial approaches and results existing in the literature about the

cesarean section for adolescent pregnant women¹⁷⁻¹⁹. The fact that the operative vaginal delivery and cesarean delivery in adolescent pregnant women are higher compared with pregnant adult women is stated by some studies. On the contrary, several studies reported that cesarean delivery rates were lower in the adolescent group compared to control group²⁰⁻²². Similarly, it is reported in a Turkish study that in a community hospital cesarean delivery rate in adolescents was significantly lower (17.1% vs 28.8%)²³. In accordance with these studies, our results showed that in the adolescent group cesarean delivery rate was lower than that of the adult groups (36.7% vs 51.4%). We observed that the most common cesarean indication of patients was cephalo-pelvic disproportion and acute fetal distress in adolescent pregnancy. However, as a cesarean indication, previous cesarean section was the major cause in the adult group. In the literature related to the surgical indications for cesarean delivery, cephalo-pelvic

disproportion, presentation abnormalities, breech delivery and pregnancy-induced hypertension were declared as causes for adolescent pregnancies^{7-9,24,25}. Operative vaginal delivery, elective cesarean or emergency cesarean were all less likely in adolescent women¹³. Brown et al, has also reported a lower rate of operative delivery in adolescent pregnancies²⁶.

This study has some limitations; this is a university hospital-based study with small samples and as an inadequate medical records regarding adolescent and adult women, we were not able to compare detailed perinatal and neonatal outcomes except from some of the pregnancy outcomes.

As a result, however, the exact causes for adverse perinatal outcomes, as a result of multiple factors, are not identified in adolescent pregnancy period, we can suggest that obstetric and perinatal complications could be significantly reduced by providing better antenatal care to adolescent pregnant women.

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Correspondence:

Candan İtemir DUVAN M.D.
 Fatih University Faculty of Medicine department of Obstetrics and Gynecology,
 Ankara
 e-mail: candanduvan@yahoo.com
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