

## ARAŞTIRMA / RESEARCH ARTICLE

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## Adolescent Pregnancy and Its Problems

### Adölesan Gebelik ve Sorunları

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#### Abstract

**Objective:** The purpose of this study was to determine the adverse outcomes and problems of adolescent pregnancy.

**Materials and Methods:** Obstetric records of 171 pregnant adolescents between 14-19 years old, who had given birth in our obstetric service between 2009 and 2016 were retrospectively evaluated. The patients were divided into two groups as early adolescents aged between 14 and 15 years old and as late adolescents aged more than 15 up to 19 years old. Babies with birth weight under 2500 gr were evaluated as low-birth-weight. The variables of gestational week at delivery, ratios of preterm birth, stillbirth, preterm premature rupture of membranes (PPROM), preeclampsia, and mode of delivery of early and late adolescents were compared.

**Results:** The age of early and late adolescents were determined as  $14.6 \pm 0.5$  and  $17.7 \pm 0.5$  years, respectively. Preterm birth was present in 3 (37.5 %) of early adolescent pregnancies and 66 (40.5%) of late adolescent pregnancies, respectively. While in early adolescent pregnancies, there was no case with stillbirth, PPRM or preeclampsia, in late adolescent pregnancies, stillbirth was observed in 5 cases (2.9%), PPRM in 6 cases (3.7%) and preeclampsia in 4 cases (2.5%). There was no significant difference between early and late adolescents in regards to the gestational age at delivery, obstetrical history, birthweight and ratio of preterm delivery.

**Conclusion:** The result of this study suggests that adolescent pregnancy is an important cause of perinatal mortality and morbidity, and there is a need to increase the attention of health professionals to appropriate management of adolescent pregnancies in order to reduce the health burden and to improve perinatal care of adolescents.

**Keywords:** Adolescent; Pregnancy; Pregnancy Outcome.

#### Özet

**Amaç:** Bu çalışmanın amacı, ergen gebeliğin olumsuz sonuçlarını ve gebelik sorunlarını belirlemektir.

**Gereç ve Yöntem:** Hastanemize 2009 ve 2016 yılları arasında müraaat eden 14-19 yaş arası 171 adölesan gebenin sonuçları retrospektif olarak değerlendirildi. Hastalar erken dönem (14-15 yaş) ve geç dönem (>15-19 yaş) adölesan olarak iki guruba ayrıldı. Doğum ağırlığı 2500 gr altı olan bebekler düşük doğum ağırlıklı bebek olarak değerlendirildi. Grupların gebelik haftaları, gebelik özgeçmiş, preterm doğum, ölü doğum, erken membran rüptürü (EMR), preeklampsi ve doğum şekilleri karşılaştırıldı.

**Bulgular:** Erken ve geç adölesan gebelerin yaş ortalaması sırası ile  $14.6 \pm 0.5$  (14-15 yaş) ve  $17.7 \pm 0.5$  (16-19 yaş) olarak saptandı. Erken doğum oranları sırasıyla, erken ve geç adölesan gebeliklerde 3 (%37.5) ve 66 (%40.5) idi. Erken adölesan gebeliklerde, ölü doğum, EMR ve preeklampsi saptanmazken, geç dönem adölesan grubunda 5 olguda (%2.9) ölü doğum, 6 olguda (%3.7) EMR ve 4 olguda (%2.5) preeklampsi saptandı. Her iki grup arasında doğum sırasında gebelik haftaları, gebelik özgeçmiş, doğum sonrası bebek ağırlığı ve preterm doğum açısından anlamlı bir fark saptanmadı.

**Sonuç:** Bu çalışma, adölesan gebeliğin, doğum sırasında meydana gelen mortalite ve morbiditenin önemli sebeplerinden biri olduğunu gösterdi. Komplikasyonları azaltmak ve ergenlik dönemindeki gebelerde, perinatal bakımı iyileştirmek için, sağlık çalışanlarının, bu gebelere daha çok özen göstermelerine ihtiyaç vardır.

**Anahtar kelimeler:** Adölesan; Gebelik; Gebelik Sonuçları.

#### 1. Introduction

The adolescent period is the biological, psychological and social period of transition from childhood to adulthood. World Health Organization determines the age between 10 and 19 as adolescent period. The adolescents are about 30%

of population and 95% of them lives in developing countries. According to data from Turkey Demographic and Health Survey of 2008, adolescents between 10 and 19 years old represent 18.5% of Turkish population (1). The concept of adolescent pregnancy is used when adolescents aged between 10 and 19 years old were pregnant (2,3). In developed and developing countries, adolescent pregnancy is an important health problem (4). In our country, 9.6% of adolescents aged between 15 and 19 years were married and the percentage of them becoming mother increases rapidly. However, this percentage increases up to 0.4%, 2.2%, 4.4%, 9.7%, and 12.9% at the ages of 15, 16, 17, 18, and 19, respectively (1).

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In our country, when her fertility begins, an adolescent does not have enough information about the reproductive physiology, methods and ways of contraception, formation and result of the pregnancy, and if confronted with unintended pregnancy problem, miscarriage, a medical evacuation is required. Adolescent pregnancies are generally accepted as high-risk pregnancies and they can cause several medical and social problems. It has been reported in the studies that the rate of incidence of complications increases when the fertility age is earlier (5). In adolescent pregnancy, fetal complications including preterm birth, low birth weight, preterm premature rupture of membranes (PPROM), preeclampsia, low Apgar score, and perinatal mortality can be seen (6-9). Adolescent pregnancy can cause serious psychological stress. In adolescents, especially who have unintended pregnancies, maternal mortality rate increases. In addition, economic responsibilities related to pregnancy, changes in lifestyle, observing of changes in family dynamics can cause psychological and social burden to the adolescent.

The aim of current pregnancy was to evaluate pregnancy outcomes in adolescents and the frequencies of adolescent-pregnancy-related perinatal problems in our province.

## 2. Materials and Methods

After approval of Human Ethics Committee of Cumhuriyet University, the outcome and history of all 171 adolescents, with pregnancy aged between 14 and 19 years old, with a birth weight of more than 500 g and with a gestational age of more than 22 weeks who admitted to our obstetric service between 2009 and 2016, are evaluated retrospectively. The patients are divided into early (14-15 years old) and late (>15-19 years old) (10) adolescent pregnancies. Obstetric variables included age, gestational age at delivery, type of delivery, previous pregnancy history, birthweight, the ratio of obstetric complications including preterm birth, Stillbirth, PPRM, and preeclampsia.

## Statistical analysis

Statistical analysis was performed using IBM SPSS version 22 (IBM Corporation, Armonk, NY, USA). We calculated descriptive statistics of obstetric variables and presented them as mean  $\pm$  SD, median (min-max), or as percentages as appropriate. Parametric variables without a normal distribution were compared with Mann-Whitney test whereas the parametric variables with a normal distribution were compared with t test. Chi-square test was used for the comparison of categorical variables. P value of <0.05 was accepted as significant.

## 3. Results

171 patient's file information were accessed, who were diagnosed with adolescent pregnancy and gave birth in our hospital. The cases were mostly nulliparous. The average age of early adolescent was 14.6 and the rate of cesarean section was 12.5%, the average age of late adolescent was 17.7 and the cesarean section was 55.8%. With regards to average age and range of cesarean section between both groups, significant differences are observed ( $p < 0.05$ ). Preterm birth risk was observed in early period group by 37.5%, and in late period group by 40.5% where stillbirth was only seen in late period patients. The birth rate in early period was 87.5% while it was 44.2% in late period. Babies with birth weight under 2500 gr were evaluated as low-birth-weight baby. With regards to pregnancy complications, gravida, parity, gestational week, birth weight between both groups, no significant differences are observed ( $p > 0.05$ ).

**Table 1.** Demographic and obstetric parameters of study groups (n: 171).

	Early period (14-15 years old) (n=8)	Late period (>15-19 years old) (n=163)
Age (y)	14.6 $\pm$ 0.5a	17.7 $\pm$ 0.5
Gestational age (wk)	38.0 (32-40)	38.0 (23-43)
Obstetric history		
Gravidity	1.0 (1-1)	1.0 (1-5)
Parity	1.0 (1-1)	1.0 (1-3)
Fatal birth weight (g)	3110.7 $\pm$ 645.1	2787.3 $\pm$ 740.2
Preterm birth		
Absent	3 (37.5%)	66 (40.5%)
Present	5 (62.5%)	97 (59.5%)
Stillbirth	0 (0%)	5 (2.9%)
PPROM		
Absent	8 (100%)	157 (96.3%)
Present	0 (0%)	6 (3.7%)
Preeclampsia		
Absent	8 (100%)	159 (97.5%)
Present	0 (0%)	4 (2.5%)
Delivery		
Cesarean	1 (12.5%)	91 (55.8%)
Vaginal	7 (87.5%)	72 (44.2%)

\* Data were presented as mean  $\pm$  SD, median (min-max) and percentage as appropriate. ap < 0.05 vs late period. PPRM, Preterm premature rupture of membranes.

#### 4. Discussion

Depending on the universal and the regional factors, the incidence of adolescent pregnancies are seen between 1%-42% around the world (11). According to relevant data of Turkey population and health survey which took place in 2008 in Turkey, 6% of adolescents were pregnant. It is seen that 4% of them have children and 2% are still pregnant. Although married women between 15 to 19 years old in our country represent 2.5% of married adult women, 5.9% of pregnancy-related deaths are in this young age group as well. As in other countries in the world, this is a very serious health problem in our country as well (1). Risks as abortion, preterm birth, low birth weight infant, interventional birth, perinatal mortality, and preeclampsia in adolescent pregnancies have been shown to be higher than other pregnancies (11, 12). In our study including a small group of adolescent pregnancies, there was no preterm birth.

In the current study, adolescent pregnancies were generally as nulligravida in our clinic. In a published study of Pembe et al. (13), it was determined that 945 of adolescent pregnant women were nulligravida. In our study, all early adolescent pregnancies were determined as nulligravida and majority of late adolescent pregnancies were determined as nulligravida.

Preterm birth is frequently encountered in adolescent pregnancy. In the study of Pembe et al. (13) preterm birth in studied groups was determined as 18.32%. In our study, the rate of preterm birth in the early adolescent pregnancies was determined as 37.5% and for late adolescent pregnancies it was 40.5%.

In a study with 775 adolescent pregnancies by Florian et al. (14), the rate of low birth weight was higher when compared with the controls. They stated that inadequacy of antenatal follow-up could cause this situation and indicated that it was very important. In another study, the low birth weight was determined as 12.1% (13). On the other hand, in our study, there were no low birth weights in early period, while low birth weight was more common in late period adolescents in accordance to early adolescence. However, this difference was not significant.

Perinatal mortality rate increases, depending on being a young mother (11,12). In a study by Taner et al. (15), they came across with 2.3% of stillbirth. In our study, stillbirth was observed only in late adolescent pregnancies and the rate for late adolescent pregnancies were 3.06%. Based on all the adolescent pregnancies, it was determined by 2.9%.

Hypertensive diseases and preeclampsia in the adolescent pregnancies were seen more frequently when compared with the adult pregnancies (12). In the study of

Taner et al. (15), the rate of adolescent preeclampsia was about 1.5%. On the other hand, in our study, preeclampsia was not present in early adolescent pregnancies, but in late adolescent pregnancies, it was about 2.5%.

In the same study of Taner et al. (15), the premature rupture of membranes was about 4.1% and in our study this rate was about 3.7% in late adolescent pregnancies. The absence of preeclampsia and no premature rupture of membranes in current study may be related with the small number of patients.

Cesarean birth rate in the adolescent pregnancies was more pronounced than adult pregnancies (16). Contrary to this, E. Ağaçayak et al. (17) could not determine any differences by the rate of cesarean sections. In our work, the rate of cesarean delivery in the early adolescent pregnancies was determined less compared with the late adolescent pregnancies; however, the difference was not significant. By considering home birth and non-follow up, that antenatal follow-up was not appropriately detailed and the inequality in number of groups could affect the drawing of conclusions negatively. Few number of patients and the numerical inequality between the studied adolescent pregnancy types who could not apply to our obstetric service can be considered as the limitation of this work.

Adolescent period, with so many alterations in the body and psychology of adolescents, is considered as one of the difficult period to carry a pregnancy. With increased complications of pregnancy, these patients require a special care to protect them from long-term health problems. For this reason, prenatal follow up and education for adolescent pregnant women are important for maternal and fetal health.

#### Conflict of interest

The authors declare that there is no conflict of interest.

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