Experimental
&
Clinical Article

Retrospective Analysis of Advanced Maternal Age Pregnancies

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OBJECTIVE: To evaluate maternal and fetal outcome in pregnancies of women aged 35 and more.

STUDY DESIGN: In this retrospective analysis of advanced maternal age pregnancies a total of 237 patient records were evaluated. Age, gestational age, birth weights, Apgar scores, maternal hemoglobin, hematocrit, preeclampsia, cesarean section, gestational diabetes, intrauterine fetal demise and fetal anomalies were compared between young and older women.

RESULTS: There was a higher rate of preeclampsia, gestational diabetes and intrauterine fetal demise in the older age group. Higher 5th minute Apgar scores, higher hematocrit values and higher cesarean section rates were observed in the control age group. There was no difference in terms of birth weight, prematurity, low birth weight, meconium aspiration or fetal anomaly.

CONCLUSION: Advanced maternal age is a risk factor for preeclampsia and gestational diabetes even in healthy women. Meticulous antenatal care should be offered to older pregnant women for the prevention of maternal complications.

Key Words: Advanced maternal age, Risk, Pregnancy

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Introduction

Advanced maternal age (AMA) is defined as pregnancy after 35 years of age. Delayed childbearing is more common in developed countries where giving birth is postponed to later years of life due to social, educational and financial factors such as late marriage, career goals and advanced infertility treatments.[1] AMA is suggested to be associated with increased maternal and fetal risks. These risks include hypertensive disorders, diabetes mellitus, preterm delivery, low Apgar scores and cesarean section.[2,3] Chronic systemic diseases directly related to maternal age are thought to be responsible for a number of pregnancy complications, especially miscarriage, chromosomal abnormalities and placenta previa.[4,5]

Advanced maternal age is not uncommon anymore in our society. Pregnancy rate over 35 years has been reported to be 6.24% in a University Hospital [6] and 4.2% of births have occured over the age of 35 in the past year all over Turkey.[7] The aim of this study was to analyze obstetric parameters and perinatal outcomes of our advanced maternal age patients.

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Material and Method

Patient records of 237 women who delivered at Celal Bayar University Hospital Department of Obstetrics and Gynecology between November 2009 and May 2010 were reviewed after consent of the Local Ethical Commitee for research. Advanced maternal age was considered as 35 years and older and included 121 patients, the control group consisted of 116 patients. Deliveries after 20 weeks of gestational age and infants weighing more than 500 g were included in the study. Data were recruited by restrospective record analysis. Pregnancy complications and perinatal outcome such as gestational week, fetal birth weight, hemoglobin and hematocrit values, Apgar scores were evaluated. Maternal and fetal complications were compared between two age groups. Data was analyzed by independent samples test with SPSS 17.0 for Windows (SPSS Inc, Chicago, IL, USA), $p<0.05$ was considered statistically significant.

Results

Data of a total of 237 patients were studied. The results of the study group are presented in Table 1. The study population included 121 patients aged over 35 and 116 patients under 35 years. Gestational ages, 5th minute Apgar scores and maternal hematocrit values were significantly lower ($p=0.014$, 0.012, 0.038) in advanced maternal age group. No difference was noted between birth weight, 1st minute Apgar scores and maternal hemoglobin (Table 1).

Table 1. Characteristics of advanced maternal age and control group

	≥35 years (n=121)	<35 years (n=116)	p
Age (years)	37.26 ± 2.3	27.44±3.9	0.0001
Gestational age at delivery (weeks)	37.09±3.63	38.03±1.87	0.014
Birth weight (g)	3059.0±850.6	3075.17±550.4	0.863
Apgar 1	8.12±2.67	9.05±1.38	0.129
Apgar 5	8.99±2.70	9.68±1.19	0.012
Hb	11.56±1.44	11.65±1.04	0.614
Hct	33.79±4.22	34.79±3.04	0.038

There was no significant difference between the two groups in respect to breech presentation (p=0.221), intrauterine death, premature delivery, meconium aspiration or fetal anomaly (p=0.116). Maternal complications such as preeclampsia and gestational diabetes were significantly more frequent in the AMA group but cesarean section rate was significantly higher in the control group (p=0.021).

Discussion

Pregnancies at extreme age groups may be unfavorable due to maternal or fetal complications. While teenage pregnancies are closely related to poor maternal weight gain, abortions, hypertensive disorders and delivery of low birthweight infants AMA pregnancies may lead to complications related to comorbidities of age.[5,8,9,10] Pregnancies at advanced ages is a common phenomenon especially in the developed world [1,11] and despite major progressions in women's health care, risks associated with AMA have not subsided.[12] The age of childbearing is increasing in Turkey, therfore it is noteworthy to identify risks of this AMA group. Many studies suggest that women over 35 years of age are at an increased risk for obstetrical complications and perinatal morbidity and mortality. [13] This study was carried out in a tertiary medical center with a higher probability of complicated pregnancies. The study group consisted of women over 35 years without comorbidities such as hypertensive disorders, type 2 diabetes, obesity or cardiovascular disease. The majority of AMA group patients were between 35-40 with only 2 women over 45 (Figure 1).

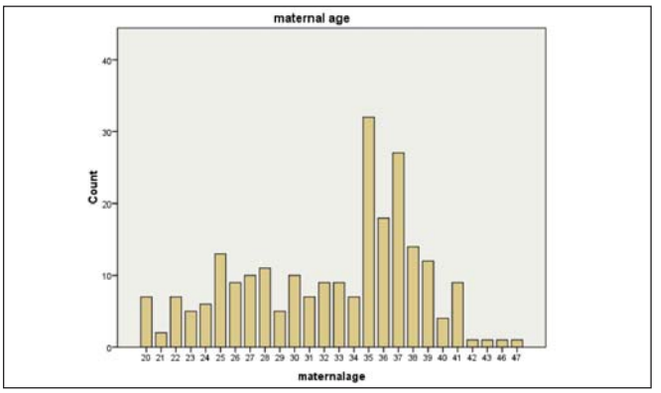

Figure 1: Distribution of maternal age

Previous studies show a higher rate for cesarean delivery in AMA groups.[14,15,16] The cesarean delivery rate in our study was 52.0% for the AMA group and 70.6% for the control group with a significant difference. The high rate for younger patients can be explained by the increasing demand for ceserean section in the last years, higher incidence of previous cesarean deliveries and the higher nulliparity in the young age group.

In this study neonatal outcome showed no significant difference between age groups in respect to prematurity, meconium aspiration, fetal anomaly or low for gestational age newborn. This is inconsistent with the results presented by Karatas et al who reported favorable neonatal outcomes in younger women.[17] There was a significant difference between gestational age at delivery in favor of pregnancies before 35 years but the birth weights and 1st minute Apgar scores were not affected by this difference. We report a significant difference of 5th minute Apgar scores in favour of the young group. Apgar scores were found to be lower in AMA groups in several studies in the first minute and fifth minute[18,19,20]or indifferent between groups.[21]

Earlier studies suggest that women over 35 years are at increased risk for gestational diabetes, preeclampsia and pregnancy induced hypertension, placenta previa or cesarean section.[15,17,21,22,23] In our study these results were consistent with literature for preeclampsia and gestational diabetes rates which were significantly more frequent in the AMA group.

The risk of intrauterine fetal death is expected to be higher in older women due to insufficiency of placental function.[22] Intrauterine fetal demise was significantly more in the AMA group. Two out of seven fetal stillbirths among the preeclamptic women. None of the reported patients had undergone invasive prenatal diagnosis for fetal chromosomal anomalies. There was insufficient data about which screening tests had been performed during pregnancy. Fetal anomalies are closely associated with maternal age, however in this study there was no significant difference between age groups.[22] Pregnancy terminations done for fetal anomalies were excluded in this study because our department is a referral center for perinatology and fetal anomalies comprise a large number of our patients. It would be a confounding factor to include those cases irre-

spective of the age group. The present fetal anomalies belong to undiagnosed pregnansies with folow up in other medical institutions who have applied only for delivery, thus are totally coincidental.

In conclusion, the results of this study showed that advanced maternal age without co-existing maternal morbidity is not a relative risk factor for adverse maternal outcome but fetal outcome is not majorly affected. Confounding factors such as grand multiparity, low socioeconomic status, sufficiency of antenatal health care and family support should be taken into account in larger samples to be able to come to a conclusion about management options and risk assesment in advanced maternal age pregnancies. Nevertheless it is of great importance to monitor AMA patients closely during pregnancy in order to detect age related complications early.

İleri Anne Yaşı Gebeleliklerinin Retrospektif İncelenmesi

AMAÇ: Otuzbeş yaş ve üstü kadınların gebeliklerinde maternal ve fetal sonuçların incelenmesi.

GEREÇ VE YÖNTEM: Retrospektif olarak 237 hasta dosyası incelendi. Yaş, gestasyonel hafta, doğum ağırlığı, Apgar skorları, maternal hemoglobin ile hematokrit, preeklampsi, sezeryan doğum, gestasyonel diyabet, intrauterin ölüm ve fetal anomali açısından genç ve ileri yaş hasta grupları karşılaştırıldı.

BULGULAR: İleri anne yaşı grubunda preeklampsi, gestasyonel diyabet ve intrauterin ölüm daha sık görüldü. Beşinci dakika Apgar skoru, hematokrit değerleri ve sezeryan oranının genç hasta grubunda daha fazla olduğu gözlendi. Doğum ağırlığı, prematürite, düşük doğum ağırlığı, mekonyum aspirasyonu ve fetal anomali açısından gruplar arasında fark yoktu.

SONUÇ: İleri maternal yaş, preeklampsi ve gestasyonel diyabet için sağlıklı kadınlarda bile risk faktörüdür. Yakın antenatal takip maternal komplikasyonların önlenmesi için yaşlı gebelere sunulan bir sağlık hizmeti olmalıdır.

Anahtar Kelimeler: İleri anne yaşı, Risk, Gebelik

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