

Maternal and Neonatal Outcomes in Pregnancies at 35 and Older Age Group

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Abstract

Objective: Our aim is to evaluate maternal and neonatal outcomes in pregnancies at 35 and older age group.

Materials and Methods: Records of 4172 patients who had given birth in İnönü University School of Medicine Department of Obstetrics and Gynecology between January 1999 and February 2004 were reviewed for their mode of delivery, pregnancy complications and neonatal outcomes. The study population was stratified according to age as women <35 and women ≥35 years of age.

Results: The study population consisted 3607 (86.5%) women aged <35 years, and 565 (13.5%) women aged ≥35 years. Complications of pregnancy (preeclampsia-p=0.001, antenatal bleeding-p=0.001) were higher in the ≥35 age group. Cesarean delivery rate (57.9%) was higher in ≥35 years group (p=0.001). Apgar scores at first and fifth minutes were significantly lower in ≥35 years group. Birth weight, cord pH and neonatal intensive care unit admission rates were similar in both of the groups.

Conclusion: Women aged 35 years or older should be informed of the risks of pregnancy.

Keywords: elderly primigravida, women aged >35 years, maternal outcome, neonatal outcome

Özet

Otuz Beş Yaş ve Üzerindeki Gebeliklerde Maternal ve Neonatal Sonuçlar

Amaç: Amacımız 35 yaş ve üzerindeki gebelerde maternal ve neonatal sonuçları değerlendirmektir.

Materyal ve Metot: Ocak 1999 ile Şubat 2004 tarihleri arasında İnönü Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum Kliniği'nde doğum yapmış 4172 hastanın kayıtları doğum şekli, gebelik komplikasyonları ve neonatal sonuçlar açısından değerlendirildi. Çalışma popülasyonundaki kadınlar 35 yaş altı ve 35 yaş ve üzeri olmak üzere yaşa göre tabakalandırıldılar.

Sonuçlar: Çalışma popülasyonundaki 3607 (%86.5) kadın <35 yaş, 565 (%13.5) kadın ≥35 yaş grubunda idi. Gebelik komplikasyonları (preeklampsi-p=0.001, antenatal kanama-p=0.001) ≥35 grubunda anlamlı oranda daha sık görülmüştü. Sezaryen doğum oranları da (%57.9) ≥35 grubunda anlamlı oranda daha yüksekti (p=0.001). Birinci ve beşinci dakika Apgar skorların ≥35 yaş grubunda anlamlı olarak daha düşük olduğu görüldü. Doğum ağırlığı, kord pH'ı ve neonatal yoğun bakım ünitesine yatış gereksinimi açısından her iki grup benzerdi.

Tartışma: Otuz beş yaş ve üzerindeki kadınlar gebelik riskleri hakkında bilgilendirilmelidir.

Anahtar sözcükler: yaşlı primigravida, 35 yaş, maternal sonuçlar, neonatal sonuçlar

Introduction

Advancing maternal age especially aged 35 years or older; has been accepted to have more risks from both the maternal and fetal perspectives. A growing number of women have delayed pregnancy. This has become a common phenomenon in the developed world as a result of social, educational and economic factors such as career goals, late marriage.

The increase in the number of women delivering at advanced ages is occurring mainly in primiparas. This might be due to advances in reproductive technologies. Modern infertility treatment has increased the number of women able to become pregnant at advanced ages. The outcome of these pregnancies has raised concern, because older age is associated inherently with higher incidence of chronic disease (1,2). For the older woman with medical problems, the obstetrical complications as well as perinatal morbidity and mortality are higher. For the woman who is in good physical condition, these risks are invalid. On the other hand, some studies suggest that elderly gravida had a high risk of poor pregnancy outcome (3), others have found little association between advanced maternal age and pregnancy outcome (4).

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The aim of our study was to determine whether advanced maternal age (aged 35 years or older) leads to increased rate of poor maternal and perinatal outcomes.

Materials and Methods

Hospital charts of 4172 women who were delivered between January 1999 and February 2004 were reviewed for mode of delivery, pregnancy complications and neonatal outcome. The study population was subdivided based on age, comparing women aged 35 years or older with women aged under 35 years. The women were identified through a search in a retrospective chart review in which demographic data, including parity and gravidity were recorded. Deliveries before 20 weeks and infants weighing less than 500 g were excluded.

The maternal variables included medical complications (defined as hypertensive disorder or diabetes), premature rupture of membranes, preterm births, postmaturity and cesarean delivery. Neonatal outcome variables included birth weight, Apgar 1st and 5th minutes, Apgar 5th minutes <7, cord pH, neonatal intensive care unit admission. Also major fetal and chromosomal anomalies were recorded.

All pregnant were under antenatal control including hemoglobin test, urine test, blood type and Rh test, ultrasonographic examinations and screening for gestational diabetes.

All statistical analyses were done with the SPSS statistical package (SPSS Inc., Chicago, IL, USA). Means of continuous variables were compared by using t tests or Mann-Whitney U tests, depending on their distribution. Chi-square analysis was used for comparison of groups. The level of significance was set at 5%.

Results

The demographic characteristics of the study group are presented in Table 1. The study population included 3607 (86.5%) women aged under 35 years, and 565 (13.5%) women aged 35 years or older. Gravidity and parity were higher in older group (p=0.001, p=0.001). Also education status was poor in older group (p=0.001).

	<35 years (N=3607)	≥35 years (N=565)	P
Age (years)*	26 (15-34)	37 (35-50)	0.001
Gravidity*	2 (0-14)	5 (1-18)	0.001
Parity*	1 (0-13)	3 (0-15)	0.001
Gestational age at delivery (weeks)**	36.4 ± 3.9	36.13 ± 3.0	0.535
Education status (n, %)			
No literacy	154 (4.3)	120 (21.2)	0.001
Elementary school	1807 (50.1)	305 (54)	
High school or collage	1646 (45.6)	140 (24.8)	
*median (minimum-maximum)			
**mean ± standard deviation			

Complications of pregnancy (preeclampsia-p=0.001, antenatal bleeding-p=0.001) were higher in the older group (Table 2). There was no significant difference between two groups in preterm delivery (p=0.226), but postterm delivery was significantly higher in older group (p=0.003). Cesarean delivery rate (57.9%) was increased in women aged 35 years or older compared with the younger group (p=0.001).

	<35 years (N=3607)	≥35 years (N=565)	P
Hypertensive status (n,%)			
Normal	3223 (89.4%)	436 (77.2%)	0.001
Preeclampsia	308 (8.5%)	92 (16.3%)	
Eclampsia	52 (1.4%)	9 (1.6%)	
Pregnancy induced	24 (0.7%)	28 (5%)	
Antenatal bleeding (n;%)	106 (2.9%)	27 (4.8%)	0.021
Preterm labor (<37 weeks) (n;%)	331 (9.2%)	43 (7.6%)	0.226
Postterm pregnancy (>41 weeks) (n;%)	203 (5.6%)	16 (2.9%)	0.003
Mode of delivery (n;%)			
Vaginal	1991 (55.2%)	238 (42.1%)	0.001
Cesarean section	1616 (44.8%)	327 (57.9%)	

There was no significant difference between two groups in birth weight (p=0.169) (Table 3). Apgar scores at 1st and 5th minutes were significantly lower in women aged 35 years old or older compared with the other group (p=0.001, p=0.001). Apgar 5th minute <7 rate was higher in older group (p=0.001). Cord pH, neonatal intensive care unit admission and anomaly rate were similar in both groups (respectively p=0.734, p=0.370, p=0.120) (Table 3).

	<35 years (N=3607)	≥35 years (N=565)	P
Birth weight (g)*	3078.1±772.5	3113.4±899.5	0.169
Apgar 1 st min*	7.4±1.9	6.8±2.5	0.001
Apgar 5 th min*	8.8±2.1	8.1±3.0	0.001
Apgar 5 th min <7 (n, %)	265 (7.3)	78 (13.8)	0.001
Cord pH*	7.08±1.34	7.13±1.18	0.734
NICU** admission (n, %)	242 (6.7)	44 (7.8)	0.370
Fetal anomaly (n, %)	46 (1.3)	12 (2.1)	0.120
* Mean ± standard deviation			
**Neonatal intensive care unit			

Discussion

Because majority of studies have pointed out perinatal and maternal outcomes in women aged over 35 years, we preferred to address pregnancy outcome in women aged over 35 years.

Since, the percentage of women having a first birth at age of 30 to 44 years doubled; by 1987, the percentage had risen to 16 (5). This trend is expected to continue.

This study involved a relatively large series of women at least 35 years old from a single center. In the past two decades, the rate of nulliparous births was increased more than 50% for women aged 30 to 39 years and increased by 50% in women aged 40 to 44 years (6,7). In our study, this high percentage is not related with an increase in the number of women in this group conceiving with the aid of assisted reproductive technology. Although 8.5% (48) of 565 older women delivered for the first time, 54% (305 women) of the older women delivered for the fifth time or more. In our study, many of the older multiparas were grand multiparas who were different in social and economic status from the older primiparas.

Early studies suggested that women aged over 35 years are at increased risk for obstetrical complications as well as perinatal morbidity and mortality (8,9). Berkowitz et al reported only slightly increased risks for gestational diabetes, pregnancy induced hypertension, placenta previa or abruption, and cesarean delivery (8). In contrast, Cunningham et al revealed a significantly increased incidence of hypertension, diabetes, abruption, preterm delivery, and stillbirth and placenta previa (9). In the same way, Bobrowski et al stated that the risk for preeclampsia in the elderly multipara was significantly higher than expected on the basis of age and parity (10). İtil et al found ablation placenta and preeclampsia higher in multipara aged over 40 years (11). Gocmen et al reported higher maternal complication rates-preeclampsia, chronic hypertension, abruption placenta in women aged 35 years or older (12). The difference between these studies is attributable to the socioeconomic status, which affects access to health care systems.

The lack of major fetal and chromosomal anomalies in our older women was encouraging. Hollier et al showed that the risk for all nonchromosomal abnormalities increased significantly with maternal age; club foot was increased significantly after the age of 35 years and heart disease after the age of 40 years (13). The importance of adequate antepartum care and genetic counseling in older women is clear (14,15). The older woman is more likely to request preconceptional counseling, either because she has postponed pregnancy and now wishes to optimize her outcome, or she does so prior to infertility treatment.

The overall maternal outcomes in our series were good, except for relatively high cesarean section rate which was primarily associated with elective operations and history of prior cesarean section. The other two important indications were fetal distress and cephalopelvic disproportion. In the primiparous women, most of cesarean deliveries were due to elective reasons whereas in the multiparous women most were due to previous cesarean delivery. Dulitzki et al stated that very advanced maternal age,

compared with younger age, was associated with a significantly higher rate of cesarean delivery (OR 7.3; 95% CI 1.5, 8.8) (16). On the other hand, the overall cesarean rate in the United States during 1992 was 22.3% and 31.7% for women between 40 and 49 years old (17). Gol et al also revealed that women aged 40 years or older had a higher risk of cesarean delivery than do younger women and they related this due to malpresentation, dysfunctional labor and previous cesarean sections (18).

Women aged 35 years or older compromise a distinct group and are susceptible to different obstetric risks. On the basis of our findings, we believe that women aged over 35 years should be informed of risks of pregnancy and followed up closely for the possible complications.

The article was presented as a poster at Türk Jinekoloji ve Obstetrik Derneği 4. Ulusal Jinekoloji ve Obstetrik Kongresi, 20-25 Nisan 2004, Antalya-Türkiye.

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