

# Outcomes of pregnancies in women with parity ten or more: a case control study

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## Summary

**Purpose:** To determine the outcomes of pregnancies in women with parity ten and more. **Materials and Methods:** We designed this study in a government hospital in rural Turkey. Pregnant women with parity of ten or more ( $n = 126$ ) were evaluated and compared with pregnant women with parity lower than ten ( $n = 90$ ). The risk factors recorded were maternal age, parity, gestational age (weeks), delivery mode, fetal birth weight and Apgar scores. Statistical analyses were carried out using the statistical packages for SPSS 15.0 for Windows (SPSS Inc., Chicago, IL, USA). **Results:** During the study period, a total of 12,551 deliveries were delivered at the current clinic. One hundred and twenty-six mothers were delivered with parity ten or more with a ratio of 1.01%. There was a statistically significant difference between the study and control group by means of maternal age, parity, fetal birth weight and 1- and 5-min Apgar scores ( $p < 0.05$ ). There was no difference in delivery mode between the groups. **Conclusion:** According to this study, pregnant women with parity ten or more showed no adverse clinical characteristics when compared with pregnant women with parity lower than ten.

**Key words:** Pregnancy; Parity; Grand multiparity; Clinical characteristics.

## Introduction

Women that had  $\geq 10$  pregnancies are referred to as grand grand multiparas by Silva [1]. Grand multiparity is used to define women with parity of four [2] or five parity [3]. Juntunen *et al.* [4] reported a high incidence of grand grand multiparas because of religious beliefs of the Laestadius movement within the Lutheran church. These women do not accept any contraception method due to their religious belief. These pregnancies have been reported to be at increased risk for adverse obstetric outcomes. Shechter *et al.* [5] found in their study that patients with grand and grand grand pregnancies were at increased risk of labor dystocia and perinatal mortality. In a retrospective study, Kale *et al.* [6] reported that being at advanced maternal age with very high parity is not always related with adverse outcomes.

In the current study, we aimed to evaluate the outcomes of pregnancies with parity ten or more delivered in our clinic.

## Materials and Methods

This retrospective and case control study was conducted at Ergani State Hospital in the south-east region of Turkey, from January 2002 to November 2010. One hundred and twenty-six pregnant women with parity ten or more were enrolled in this study. The control group included 90 pregnant women with parity  $< 10$ . The parameters recorded for both groups were maternal age, parity, gestational age (weeks), delivery mode, fetal birth weight and Apgar scores.

The mean and standard deviation (SD) were calculated for continuous variables. Chi-square test and Student's t-test evalu-

ated associations between the categorical and continuous variables. Two-sided  $p$  values were considered statistically significant at  $p < 0.05$ . Statistical analyses were carried out by using the statistical packages for SPSS 12.0 for Windows (SPSS Inc., Chicago, IL, USA).

## Results

During the study period, a total of 12,551 deliveries were delivered at the current clinic. One hundred and twenty-six mothers were delivered with parity ten or more with a ratio of 1.01%.

The clinical characteristics of the groups are depicted in Table 1. The mean age of the patients and control group was  $40.90 \pm 3.76$  years and  $28.82 \pm 5.12$  years old, respectively. There was a statistically significant between the age of the groups ( $p < 0.05$ ).

Mean parity of the patients and the control group was  $10.95 \pm 1.46$  (range, 10-16) and  $2.24 \pm 2.01$  (range, 0-9). The difference between the parity of the groups was statistically significant ( $p < 0.05$ ).

Mean gestational weeks and fetal birth weight of the patients was  $38.26 \pm 2.35$  weeks and  $3387.80 \pm 613.90$  g, respectively. The mean 1-min Apgar scores of the patients and control group were  $7.19 \pm 2.01$  and  $6.42 \pm 1.47$ , respectively. The mean 5-min Apgar scores of the patients and control group were  $9.14 \pm 2.44$  and  $8.40 \pm 0.86$ , respectively. The difference between the Apgar scores was statistically different between the groups ( $p < 0.05$ ).

In the patient group, 60 (47.61%) delivered spontaneously by the vaginal route, while 66 (52.38%) delivered by cesarean section. In the control group 39 (43.34%) of the patients delivered spontaneously by the vaginal route, and 51 (56.66%) delivered by cesarean section.

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Table 1.— Demographic and clinical characteristics of the patients.

Variables	Pregnant women with parity $\geq 10$ (n = 126)	Pregnant women with parity < 10 (n = 90)	p
Age (years)	40.90 $\pm$ 3.76	28.82 $\pm$ 5.12	<b>&lt; 0.001*</b>
Parity	10.95 $\pm$ 1.46	2.24 $\pm$ 2.01	<b>&lt; 0.001**</b>
Gestational weeks	38.26 $\pm$ 2.35	38.22 $\pm$ 1.22	0.896*
Fetal birth weight (g)	3387.80 $\pm$ 613.90	3578.10 $\pm$ 550.77	<b>0.020*</b>
Apgar score - 1 min	7.19 $\pm$ 2.01	6.42 $\pm$ 1.47	<b>0.02*</b>
Apgar score - 5 min	9.14 $\pm$ 2.44	8.40 $\pm$ 0.86	<b>0.07*</b>
Delivery type <sup>a</sup>			0.677**
SVD	60 (47.61)	39 (43.34)	
Cesarean section	66 (52.38)	51 (56.66)	

SVD: Spontaneous vaginal delivery;  $\alpha$ : Data presented as n (%); Bold p values are statistically significant; \*: p values were obtained by Student's t-test; \*\*: p values were obtained by chi-square test.

## Discussion

In the present study, we evaluated the demographic and clinical characteristics of pregnant women with parity ten or more delivered at our clinic and also compared them with a control group of pregnant women with parity lower than ten. The age and parity were higher in the patient group. Fetal birth weight was higher in the control group. According to our study, pregnant group with parity ten or more was associated with lower fetal birth weight. The Apgar scores of the patient group was higher than the control group. Also there was no statistically significant difference between the groups for the delivery mode.

In a retrospective study, Humphrey [7] reported the characteristics of pregnant women with high parity. According to this study, pregnancies in women with high parity were not associated with poor maternal and obstetric outcomes. In these patients, spontaneous vaginal birth was higher than the pregnant women with lower parity.

Seidman *et al.* [8] reported their experience in pregnant women with parity seven or more. They found that these pregnancies were at decreased risk of small-for-gestational age infants and found no increased obstetric complications or neonatal morbidity and mortality. We also found no adverse maternal and fetal outcomes in our study group.

Kale *et al.* [6] studied 23 women with very high parity. They found no association between adverse maternal outcomes (hypertensive disorders, preterm labor, cesarean section) and fetal outcomes (lower Apgar scores, lower birth weight and perinatal mortality) in their study.

Similarly to this study, we also found no adverse outcomes in pregnant women with parity ten or more.

Brunner *et al.* [9] conducted a case control study to evaluate the obstetric risk factors in grand multiparous pregnant women. They reported that women were at increased risk of placental complications such as placenta previa and ablatio placenta. They also reported that with proper and good obstetric care no adverse maternal and fetal outcomes are seen in grand multiparous women. Similar to this study, we also found that being with parity ten or more did not increase the risk of adverse maternal and fetal outcomes.

In conclusion, according to the present study the maternal and fetal outcomes of pregnant women with parity ten or more were similar to the control group. Therefore, pregnant women with parity ten or more should not be at increased risk of adverse maternal and fetal outcomes.

## References

- [1] Silva L.J.P.: "Grand grand multiparity". *J. Obstet. Gynecol.*, 1992, 12, 301.
- [2] Bai J., Wong F., Bauman A., Mohsin M.: "Parity and pregnancy outcomes". *Am. J. Obstet. Gynecol.*, 2002, 186, 274.
- [3] Samueloff A., Mor-Yosef S., Seidman D.S., Rabinowitz R., Simon A., Schenker J.G. *et al.*: "Grand multiparity – a nationwide survey". *Isr. J. Med. Sci.*, 1989, 25, 625.
- [4] Juntunen K.S., Kvist A.P., Kauppila A.J.: "A shift from a male to a female majority in newborns with the increasing age of grand grand multiparous women". *Hum. Reprod.*, 1997, 12, 2321.
- [5] Shechter Y., Levy A., Wiznitzer A., Zlotnik A., Sheiner E.: "Obstetric complications in grand and great grand multiparous women". *J. Matern Fetal Neonatal Med.*, 2010, 23, 1211.
- [6] Kale A., Kuyumcuolu U., Güzel A.: "Is pregnancy over 45 with very high parity related with adverse maternal and fetal outcomes?". *Clin. Exp. Obstet. Gynecol.*, 2009, 36, 120.
- [7] Humphrey M.D.: "Is grand multiparity an independent predictor of pregnancy risk? A retrospective observational study". *Med. J. Aust.*, 2003, 179, 294.
- [8] Seidman D.S., Armon Y., Roll D., Stevenson D.K., Gale R.: "Grand multiparity: an obstetric or neonatal risk factor?". *Am. J. Obstet. Gynecol.*, 1988, 158, 1034.
- [9] Brunner J., Melander E., Krook-Brandt M., Thomassen P.A.: "Grand multiparity as an obstetric risk factor; a prospective case-control study". *Eur. J. Obstet. Gynecol. Reprod. Biol.*, 1992, 47, 201.

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