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Maternal and fetal outcomes in grand multiparous women

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Grand multiparity is defined by the International Federation of Gynecology and Obstetrics (FIGO) as 5 deliveries or more [1]. Although the incidence of grand multiparity is low in economically developed countries, religious or cultural factors mean that it is common in some populations or communities.

Several studies have provided data concerning the risk of grand multiparity for both mother and fetus [1–5]. However, grand multiparity does not necessarily lead to significant additional maternal, fetal, or neonatal complications in high-income countries where access to high-quality healthcare is available [4].

The healthcare system in Croatia is socially oriented, especially for women and children, where 6–10 prenatal visits including 4 ultrasound examinations are common. Migration of people from eastern countries to Europe in the last 20 years, for political and economic reasons, has had an influence on our community and we have observed an increased incidence of multiparous deliveries in our hospital. The aim of the present study was to examine the influence of grand multiparity on fetal and maternal outcomes at our institution.

The study was designed as a retrospective analysis of medical records taken from a tertiary healthcare center with approximately 3000 deliveries per year. During a 6-year period from 1993–1999 a total of 22 504 women were delivered at the hospital. Only multiparous women with 3 or more previous deliveries were included in the study to obtain a similar population and to eliminate confounding factors. Two groups of

multiparous women were compared. Group 1 comprised grand multiparous women who had had 5 or more deliveries ($n=107$, 0.5%), whereas group 2 comprised multiparous women who had had 3–4 deliveries and who served as the control group ($n=2745$, 12.2%). The following parameters were assessed from the maternal records: age, marital status, education and employment as measures of socio-economic status, number of prenatal visits, and pregnancy and labor complications. Fetal outcomes assessed were: birth weight, Apgar score at 1 and 5 minutes, acidosis, intracranial hemorrhage, early cerebral signs, infections, malformations, and mortality as measures of perinatal care. Statistical analysis was performed using the Fisher exact test and the t test was used to compare the two groups. Independent ethical committee approval was obtained for this study.

Grand multiparous women were more likely to be older, unmarried or divorced, less educated, unemployed, and to have received less prenatal care than the control group; these differences were significant (Table 1). Although labor complications were similar between the two groups, the cesarean delivery rate was significantly higher in group 1 compared with group 2 (13.1% vs 8.2%; $P=0.037$). Mean duration of labor was similar between the two groups, but prolonged labor of more than 24 hours was more frequent in group 1. Mean birth weight was significantly lower for neonates born to grand multiparous women compared with multiparous women (3237 ± 568 g vs 3424 ± 621 g; $P=0.000$). Although the percentage of neonates born with a low birth

Table 1
Comparison of maternal characteristics.^a

Characteristics and outcomes	Grand multiparas (n = 107)	Multiparas (n = 2745)	P value
Age ≥ 41 y	14 (13.1)	115 (4.2)	0.001
Mean age ^b	33.7 \pm 5.2	32.3 \pm 4.7	0.010
Marital status			
Unmarried or divorced	26 (24.3)	272 (9.9)	0.000
Education			
Without or incomplete	49 (45.8)	154 (5.6)	0.000
Basic	31 (29.0)	677 (24.7)	0.250
High	2 (1.9)	330 (12.0)	0.000
Unemployed	98 (91.6)	1092 (39.8)	0.000
Without prenatal care	39 (36.4)	614 (22.4)	0.009
Gestational age, wk ^b	39.16 \pm 2.24	39.15 \pm 2.20	0.291
Cesarean delivery	14 (13.1)	225 (8.2)	0.037
Vacuum extraction	0 (0)	25 (0.9)	0.386
Prolonged labor (>24 h)	5 (4.7)	35 (1.3)	0.018

^a Values are given as number (percentage) or mean \pm SD unless otherwise indicated.

^b Fisher exact test and t test with statistical significance at $P < 0.05$.

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Table 2
Comparison of the neonatal outcomes.^a

Outcomes	Grand multiparas (n = 109 neonates) ^b	Multiparas (n = 2790 neonates) ^c	P value
Birth weight, g	3237 ± 568	3424 ± 621	0.000
Low birth weight, >2500 g	10 (9.2)	173 (6.2)	0.073
Apgar score			
≤7 at 1 min	16 (14.7)	237 (8.5)	0.039
≤7 at 5 min	8 (7.3)	86 (3.9)	0.029
Early cerebral signs	3 (2.8)	14 (0.5)	0.025
Malformations	0 (0)	45 (1.6)	0.181
Perinatal mortality	3 (2.8)	34 (1.2)	0.115
Late fetal deaths	3 (2.8)	4 (0.1)	0.002
Intrapartum deaths	0 (0)	2 (0.07)	0.926
Neonatal deaths	0 (0)	28 (1.0)	0.345

^a Values are given as number (percentage) or mean ± SD unless otherwise indicated.

^b Includes 2 multiple births.

^c Includes 45 multiple births.

weight (<2500 g) was greater in grand multiparas, the difference was not significant (9.2% vs 6.2%; $P=0.073$). The neonatal outcome among grand multiparas compared with multiparas indicated a significantly higher incidence of low Apgar scores at 1 and 5 minutes, and higher late fetal mortality (2.8% vs 0.1%; $P=0.002$), but a lower incidence of major congenital anomalies and neonatal mortality compared with multiparous women (Table 2). The incidence of infections, birth injuries, acidosis, and intracranial hemorrhage was similar between the two groups.

The present study showed that grand multiparity was associated with lower socioeconomic status and poor prenatal care, which resulted in a greater number of perinatal late fetal deaths. Insufficient prenatal care may explain the higher incidence of late fetal death in grand multiparous women. If we exclude the higher incidence of cesarean deliveries and low Apgar scores, we did not find any differences in

pregnancy, delivery, puerperal or neonatal complications among the offspring of the grand multiparous women. In contrast, Fuchs et al. [3] reported increased fetal and maternal morbidity, and a higher incidence of obstetric complications and operative deliveries compared with the general obstetrics population. This difference is probably due to the different control groups. Other studies have reported a higher incidence of pregnancy and obstetric complications with good perinatal outcome [2,5]. These studies concluded that with improved socioeconomic status and a high standard of prenatal care, grand multiparity does not necessarily carry special obstetric or perinatal risk [2–4].

The main limitations of the present study are the relatively low number of grand multiparous women included and the retrospective analysis. The results suggest that most of the maternal and fetal adverse effects found to be linked with multiparity in our population may be attributed to socioeconomic factors rather than to parity. However, in our community, grand multiparity still carries an increased risk of operative delivery and perinatal mortality.

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Methotrexate with or without misoprostol to terminate pregnancies with no gestational sac visible by ultrasound

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Many women present for abortion very early in their pregnancies. Most providers are reluctant to perform either a medical or surgical abortion until a gestational sac is visible. Previous studies of early

ectopic pregnancies have shown a 90% success rate using a single dose of methotrexate [1]. There are reports of terminating pregnancies with no visible gestational sac using mifepristone and misoprostol ($n=30$) [2] and surgical aspiration ($n=153$) [3]. Methotrexate followed by misoprostol has been used successfully to terminate pregnancies under 7 weeks of gestation, with 79% completing within 1 week [4].

The objective of the present study was to compare methotrexate used with or without misoprostol to terminate pregnancies with no visible gestational sac.

Inclusion criteria for this chart review were women who had presented for medical abortion whose endovaginal ultrasound showed no gestational sac, initial beta-human chorionic gonadotropin (hCG) level was less than 2000 IU/L, and who were treated with methotrexate (with or without misoprostol). The usual regimen was 50 mg/m² of methotrexate intramuscularly or orally (day 1) followed by 600–800 µg of misoprostol vaginally repeated 3 times before the first follow-up at about day 8. Serial beta-hCG levels were drawn on days 4 and 6, or 5 and 7. In September 2008, the protocol was changed to methotrexate alone to reduce symptoms. The main outcome measure was whether beta-hCG had dropped by more than 15% over 48–72 hours in the first week.

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