Pregnancy Outcome in Grand and Great Grand Multiparity
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Abstract:

Objective: To study the obstetric performance and neonatal outcome of patients of extreme multiparity, Para 10 and more, compared to control group of Para 2 to 4.

Study Design: It is a retrospective comparative study. Data were collected from Medical Records of patients during the period from January-December 2000. The total number of deliveries during that period was 10,999. 240 patients records were reviewed, 120 records in each group.

Result: The incidence of great-grand multiparity was 1.09%. The incidence of lack of perinatal care among great grand multipara was statistically significant. However, there are no differences in the perinatal morbidity and mortality; also there was no difference in the rate of instrumental delivery and mal-presentation in the two groups. The duration of pregnancy is similar in the two groups. There was no difference in incidence of antepartum hemorrhage, rate of caesarean section rate. However, the only statically significant difference in the two groups was the increased incidence of large babies (macrosomia).

Conclusion: This study showed that extreme grand multiparity carry the added risk of macrosomia (> 4000mg), this was not reflected on any adverse perinatal outcome. However, the number of patients in this study is limited and it is difficult to draw firm conclusion.

Introduction:

For several decades, grand multiparity has been viewed with great caution. Grand multiparity has almost disappeared in western countries due to advancements in family planning. However, family planning is not welcome in some region because of cultural, religious or other social reasons.

Grandmultiparity is associated with a long list of complications, which include, preterm labour, anemia, pendulous abdomen, malpresentation, preeclampsia, placenta praevia and abruptio placenta. Labour among grandmultiparous patients is not without complications and is regarded as a high risk labour because of the following complications, uterine atony, postpartum hemorrhage, obstructed labour, ruptured uterus and higher incidence of operative delivery because of abnormal position and big baby and maternal exhaustion.

The religious and social dynamics of the society in Qatar have led to continuing high incidence of grandmultiparity. The average number of children in any family is seven[1]. This tendency to bigger families is not restricted to Qatari national only but it happen in some other communities like the Pakistani and Palestinian.

The aim of this work is to evaluate the maternal and fetal risk factors among grand multiparous women who delivered in the women’s hospital.

Materials & Methods:

It is a retrospective comparative study done in Women’s Hospital in Doha Qatar. This is the only maternity hospital in the country, receiving all patients from different cities, health centers and private clinics. Data were collected from Medical Records of patients during the period from January-December 2000. 240 records were reviewed, 120 records for each group. The department of Bio-statistics was consulted and they helped with the statistical analysis. Data handling were performed through the help of computer software.

Results:

The incidence of patients above 40 years old was significantly higher in the great grand multiparous group (91.1%), whereas, it was 23.4% in the multiparous group. Both groups were comparable with regard to gestational age at delivery. However, great grand multiparous women had significantly fewer antenatal visits compare to the multiparous (Figure 1).

Antepartum complications were compared between groups. There was no significant difference between the incidence of diabetes, chronic hypertension, pre-eclampsia, anemia, preterm labour, intrauterine feta death or labour dysfunction (Table 1).
We focus on the intrapartum complications most frequently associated with grand multiparity in the literature. No significant difference was observed in the incidence of abruptio placentae, dysfunctional labour malpresentation or shoulder dystocia.

There was no difference in the incidence of meconium-stained amniotic fluid and Apgar score between the two groups.

Although no difference was observed in birth weight at delivery, the incidence of macrosomia was significantly higher in the great-grand multiparity group i.e. 19.7% comparing to 9.4% in multi gravida group. Whereas the incidence of low birth weight was almost doubled in mutlipara group 14.1% compared to 7.4% in higher parity group (Table 2).

There was no significant difference between the two groups regarding prenatal complications type of presentation. Indications for caesarean section and instrumental vaginal delivery were similar in both groups (Figure 2).

There was no incidence of ruptures uterus or maternal mortality in either group. The common indication for caesarean section was previous scar followed by failure to progress and fetal distress with no significant difference with regard to the indications in both groups. The socioeconomic status is similar in the two groups.

### Table 1

<table>
<thead>
<tr>
<th>Complications</th>
<th>Grand Multipara</th>
<th>Multipara</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>5 (4.1)</td>
<td>5 (3.9)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>2 (1.6)</td>
<td>4 (3.1)</td>
</tr>
<tr>
<td>Anemia</td>
<td>2 (1.6)</td>
<td>2 (1.6)</td>
</tr>
<tr>
<td>Antepartum hemorrhage</td>
<td>3 (7.7)</td>
<td>1 (3.8)</td>
</tr>
<tr>
<td>Instrumental delivery</td>
<td>1 (0.8)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>Caesarean section</td>
<td>37 (30.3)</td>
<td>25 (20)</td>
</tr>
</tbody>
</table>

### Table II

<table>
<thead>
<tr>
<th>Birth weight</th>
<th>Para 10 &amp; above</th>
<th>Para 2 - 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
</tr>
<tr>
<td>&lt; 2500 gm</td>
<td>9</td>
<td>7.4</td>
</tr>
<tr>
<td>2500-3999 gm</td>
<td>89</td>
<td>73</td>
</tr>
<tr>
<td>&gt; 4000 gm</td>
<td>24</td>
<td>19.7</td>
</tr>
</tbody>
</table>

**Discussion:**

Great grandmultiparity is a well-known worldwide risk factor for the pregnant lady with increased risk of maternal and fetal morbidity and mortality. There is increased incidence of obstetrics and medical complications.

For cultural and religious reasons, grandmultiparity is common in our community. Lack of family planning results in the ultimate increase in the number of grandmultiparous women. Chromosomal malformation was supposed to be higher in this group. However the majority of women in this study did not have any sort of prenatal diagnosis, this because of lack of awareness of the increased chromosomal abnormality with the age, inadequate counseling and low acceptability of invasive perinatal diagnostic tests (amniocentesis, chorionic villous sampling, cordocentesis). Some patients but not all had Nuchal translucency test between 11 to 14 weeks to estimate the risk of trisomy (Figure 3).

No abnormal result was reported in the group studied. It was a striking finding in our study that none of the previously reported morbidity or mortality associated with grandmultiparity was noted in our population. The only exception was increased incidence of macrosomia, which might be explained by a birth order-birth weight link. However, we did not see any occurrence of birth trauma among the few large babies in our study. The number of cases may not enough to demonstrate such differences.

Grand multiparity and older age are closely related. In this study, 112 cases (91.1%) were at the age of 35 and above.
and in spite of this age no significant adverse outcome was noted. This is not surprising since Kirs et al., recently present data that women at advance maternal age who are delivered in modern tertiary center may be of no higher risk for adverse outcome than younger parturient[6], and our hospital has been considered a highly equipped tertiary center.

Our grand multiparous group had a large proportion of patients who did not receive any antenatal care. The intrapartum complication incidence, however, was not significantly different in patients with no prenatal care, when compared with the overall complication rate. This may be explained by the observations that multiparous patients who have had no problems in previous pregnancies often delay seeking medical care. Kiely et al recently analyzed the effect of maternal parity on various components of perinatal mortality and found that among grand multiparous “intrapartum fetal deaths” were the only outcome to be significantly increase[6]. Our study did not mirror the increase in the total stillbirth in the grand multiparous population.

In the literature, malpresentation at the time of delivery[7] and macrosomia[8,9] were found the most frequent fetal and neonatal risk factors of a grand multiparous. Meconium-stained amniotic fluid, pre-term labour and post-term delivery were also reported to be increased among grand multiparous patients[10,11], all of which generated concern among obstetricians.

In our study, macrosomia was significantly higher in grandmultiparous group than in the multiparous group. The likelihood of cesarean delivery of a macrosomic fetus is approximately twice that of a normally grown infant, primarily because of abnormalities of labor (34 versus 17 percent)[12]. Macrosomia also predisposes women to severe postpartum hemorrhage and vaginal lacerations. In one report, birth weight greater than 4000 g approximately doubled the risk of maternal blood loss greater than one liter[13]. In another report, vaginal delivery of a macrosomic infant that was complicated by shoulder dystocia resulted in more lacerations requiring repair (relative risk 5.4)[14].

However, there was no increased in obstetrics and medical complications associated with grandmultiparity in our study. This may partly because of the small number.

Our study findings were also supported by the observation made by Abu Heiji et al, Fayed et al, whose studies were also performed in a great grand multiparous, and they concluded that with high socio-economic state and high standard of antenatal care extreme grand multiparity does not carry any added special obstetric or perinatal risk[15,16,17].

Of course, one should not, in turn, generalize from this study to all populations, but rather uses these results for appropriate health planning in general and individual family guidance in particular.

References: