

Original Article

FETO-MATERNAL COMPLICATIONS IN GRAND MULTIPAROUS WOMEN PRESENTING IN GYNAECOLOGY & OBSTETRICS DEPARTMENT, SIR GANGA RAM HOSPITAL, LAHORE, PAKISTAN: A TERTIARY CARE HOSPITAL

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Objective: To assess the frequency of maternal and fetal complications in grand multiparous women presenting in a tertiary care hospital.

Methods: A total of 300 grand multiparous women were included in this study. Any maternal and fetal complication like anemia, pre-eclampsia, placental abruption, post-partum hemorrhage, caesarean section rate, low birth weight and intra-uterine death were observed during delivery and within 24 hours.

Results: Mean age of patients was 34.1 ± 4.8 years. More than one complication was encountered in most of the women and these suffered mainly from anemia (hemoglobin < 10.5 g/dl) in 102 patients (34%), placental abruption in 35 patients (11.7%), pre-eclampsia in 71 patients (23.7%), post-partum hemorrhage in 60 patients (20%), and caesarean section was performed in 65 patients (21.7%). Regarding the fetal outcome, 39 (13%) babies were born with low birth weight and 37 (12.3%) babies were intrauterine death.

Conclusions: Grand multiparity is still a high risk pregnancy in our setup. Grand multiparity itself is not as hazardous, it is the lack of basic obstetric care during pregnancy and delivery, due to which grand multiparity is known as high risk pregnancy.

Keywords: grand multiparous, maternal complications, fetal complications.

Introduction

The term “grand multipara” was led in 1934 by Solomon, who called grand multiparas as “the dangerous multiparas”.¹ Conservatively speaking, the older literature defines “grand multiparity” (GMP) as parity > 7 .^{2,3} Additionally recent reports limited a definition of GMP to start from a parity of 5 because the threshold of risks of any obstetric complication, neonatal morbidity, and perinatal death increase markedly at parity ≥ 5 .^{4,5} Grand multipara are high risk obstetric patients who are liable to develop antenatal, intrapartum and adverse neonatal outcome⁶ and these dangers of high order birth can be prevented by effective family planning methods.⁷ In another study Grand Multipara (GMP) is not considered dangerous in developed countries with satisfactory health care system.⁸ However reviewing literature from under developed countries, GMP is a risk factor for pregnancy related complications in both secondary and tertiary health care centres.⁹ The majority of studies argued that GMP are more likely to be of old age which might be the reason for increased morbidity and mortality.¹⁰

In our clinical practice, such factor is difficult to remove because of women's age is the most important biological variable that influences the reproductive events which we study. The current study was conducted in a tertiary hospital where

medical care is given free of cost to all mothers. The aims of the current study were to determine the prevalence of maternal and fetal outcomes related to grand multiparity like anemia, pre-eclampsia, placental abruption, post partum hemorrhage, caesarean section rate, low birth weight and intrauterine death.

Methods

This is a prospective, cross-sectional study done at Gynecology & Obstetrics department, Unit I at Sir Ganga Ram Hospital, Lahore, Pakistan. The mean annual average of deliveries are 24000 including primigravida 40%, multigravida 60% of all deliveries. The study population consisted of all multiparas defined as a woman who had 5 or more births after 24 weeks gestation. A total of 300 cases were collected from March 2019 to August 2019. Sociodemographic factors, obstetric complications, and neonatal morbidity for all cases were recorded. Maternal variables we assessed included anemia, placental abruption, preeclampsia, postpartum hemorrhage, cesarean section. Fetal variables we assessed were low birth weight and intrauterine death. Each of the maternal and fetal complications were assessed against each group. This study was approved by the Ethical Committee of the hospital. The Statistical Package for the Social Sciences (SPSS 21 for Windows) was used for recording and statistical analyses of data.

Results

Out of 300 grand multiparous patients, mean age of patients was 34.1 ± 4.8 years. More than one complication was encountered in most of the women including anemia in 102 (34%) patients, placental abruption in 35 (11.7%) patients, pre-eclampsia in 71 (23.7%) patients, post partum hemorrhage in 60 (20%) patients, and caesarean section was performed in 65 (21.7%) patients. **(Table-1)** Regarding the fetal outcome, 39 (13%) babies were born with low birth weight and 37 (12.3%) babies faced intrauterine death. **(Table-2)**

Table-1: Pregnancy outcome in grand multipara (N=300)

Pragnancy Complications	Frequency(n=300)	Percentage
Anemia	102	34%
Palacental Abruption	35	11.7%
Pre-edampsia	71	23.7%
Post-partum Hemorrhage	60	20%
Caeserean Section	65	21.7%

Table-2: Perinatal outcome in grand multipara.

Birth Outcome	Frequency(n=300)	Percentage
Low Birth Weight	39	13%
Intra-uterine Death	37	12.3%

Discussion

This prospective cross-sectional study was conducted in order to explore whether parity has a harmful effect on maternal and fetal health. Our results showed that highparity pregnancies lead to multiple health issues of which anemia is to be the commonest with a average of 34%. In a healthy pregnancy, hormonal changes lead to an increase in plasma volume which causes reduction in hemoglobin level.¹¹ This hemodilution effect is considered normal if the hemoglobin concentration does not drop below a certain level e.g. 11.0 g/dl. Compared to the non-pregnant state, every pregnancy carries an increased risk of hemorrhage before, during, and after delivery. Therefore, higher parity exposes women more frequently to periods of hemorrhage risk that is supported by percentage of patients suffering with Postpartum Hemorrhage which turned out to be 20%. Although there is no consensus with regard to the exact mechanisms by which high parity increases the risk of hemorrhage, some reports have suggested intermediaries such as increased venous drainage to the lower part of the uterus, hyalinization of blood vessels, and decreased elasticity of the uterine wall.¹² None of these

propo- sed mechanisms have been confirmed.

In the current study we found that there is a significant association between caesarean section and grandparity 21.7%. Certain other factors also lead to caesarean such as macrosomia , maternal diabetes and maternal hypertension which are not included in scope of our study however , a study done in Saudia Arabia have elaborated such risk factors and they stated the high rate of Caesarean section can be explained by fetal macrosomia, diabetes mellitus and pregnancy induced hypertension ($p < 0.05$). All of these complications of pregnancy are well documented to increase the rate of caesarean delivery. This data showed that within grand multiparity 123(28.6%) of grand multiparas were less than 35 years of age, of whom 72 (60%) were delivered by Caesarean section with no significant differences compared to those greater than 35 years of age (60.0% VS 62.3% $p = 0.666$).¹³ Our next variable that is pre-eclampsia have a very marked frequency of 23.7% which is far more than previous studies, in our neighboring country which comes out to be 9%.¹⁴ Rayamajhi et al.¹⁵ reported a strong association of grand multiparity with hypertensive disorders in pregnancy. This brings in a new door for clinicians to explore factors that may lead to increased risk of pre-eclampsia in our population as compared to European and other Asian population. Placental Abruption was of least frequency among all the variables we recorded as it was found in 11.7% of population. Also in literature not much of frequency of placental abruption in GMP has been reported so far. Considering peri-natal outcome in grand parity intrauterine death and low birth weight was found as 12.3% and 13% which is also supported by study by Sunder Pal Singh¹⁶ in 2014 who reported perinatal outcomes to be of closest frequency as of our study.

Conclusion

In view of the results obtained in this study, we feel that grand multiparity continue to pose additional risk for pregnancy outcomes even in modern obstetrics care. In a community where large family is desirable, still there is a place for family planning. Further study is warranted to investigate the outcome of younger grand multiparty. Extreme parity poses a high burden on our healthcare system which should be dealt with extreme care especially in a setup like our country where unbooked deliveries poses a major burden on Obstetrics & Gynecological centres.

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