ORIGINAL ARTICLE

ANNALS OF PUNJAB MEDICAL COLLEGE

Obstetric Outcome in Grand Multipara at Term with Singleton Pregnancy in a Tertiary Care Hospital

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Submitted for Publication: 08-05-2024
Accepted for Publication 15-06-2024

How to Cite: Sadozai R, Bibi S, Sahira, Khan S, Robeen K, Heema. Obstetric Outcome in Grand Multipara at Term with Singleton Pregnancy in a Tertiary Care Hospital. APMC 2024;18(2):121-125. **DOI: 10.29054/APMC/2024.1605**

ABSTRACT

Background: A woman with more than five children is considered grand multiparous. Grand multiparous women have increased pregnancy and delivery risks as a result of inadequate prenatal care and advanced maternal age. **Objective:** This study aimed was to find the obstetric outcomes for grand multipara individuals who presented with a term singleton pregnancy. **Study Design:** Descriptive cross-sectional study. **Settings:** Obstetrics & Gynecology Department of Hayatabad Medical Complex in Peshawar, Pakistan. **Duration:** From June 1, 2022, to January 1, 2023. **Methods:** A total of 50 women patients with >5 number of children between 37–40 weeks of gestational period diagnosed clinically and through ultrasound with singleton pregnancy irrespective of age groups were included. Collected data analyzed using SPSS version 21. **Results:** Of the fifty patients, eighty percent were in the age range of 30-40 years. Vaginal delivery was the most common method of birth, with a normal-birth-weight infants accounting for 80% of cases and an Apgar score of 92% with >6 at five minutes. Anemia and hypertension accounted for 16% and 14% of the common complications. These patients had obstructed labor (6%), previa (6%), placental abruption (6%), and malpresentation (14%) as obstetrical complications. **Conclusion:** Grand multiparas are more vulnerable to increased risks due to several factors including a shorter pregnancy interval, inadequate health care, and an increase in age-related risks. Improving the literacy rate, health care facilities, availability of safe and effective contraception, and reproductive health status are necessary for better obstetrical outcomes.

Keywords: *Grand multiparity, Pregnancy outcome, Complication, Obstetrics.*

INTRODUCTION

Grand multiparity is the term applied to any women having more than 5 children.[1] It is often considered a clinical entity as pregnancy and delivery in grand multiparas are at higher risk due to poor antenatal care and advanced maternal age.[2] In developing countries, the incidence of grand multiparity with its complications like pregnancy induced hypertension, Eclampsia, anemia, placenta previa, placental abruption, malpresentations, obstructed labour, ruptured uterus, instrumented deliveries, operative devices, caesarean hysterectomy, post-partum complications, maternal mortality, perinatal mortality, admission to neonatal unit are still high.[3,4]

Progressive age in grand multiparous women was found to be cause of the mostly caesarean delivery, preterm birth and underweight birth and requires thorough risk management and personalized treatment plans.[5] A wide-ranging management of maternal comorbidities and great multiparity is needed during obstetrics to minimize the adverse outcomes for newborn and mothers.[6] Risk factors for unfavorable obstetric outcomes, including as admission to the neonatal intensive care unit (NICU), birth trauma, and macrosomia, have grown in relation to maternal comorbidities such as diabetes, hypertension, and obesity.[7]

Compared to low parity women with singletons and poor APGAR scores, multiparous moms had worse newborn outcomes, including minimum number of admission to the neonatal intensive care unit and perinatal mortality.[8] According to recent research, compared to low parity women, grand multiparity appears to be the reason for the high prevalence of anemia, preterm birth, low birth weight, macrosomia, low APGAR scores, stillbirth, and a high perinatal death rate.[9,10] On the basis of these findings, it is emphasized that multiparous women should be under strict medical checkup in their perinatal, intrapartum and postpartum periods and there should be community awareness about the risks of multiparity and birth control among older women.[11] To promote maternal health and lower the neonatal deaths, local health community members should be trained and surveys should be done to minimize the risk of multiparity as factor in neonatal deaths.[12]

There is a need to identify women whose pregnancies are at risk of complications and need active intervention by increasing awareness about antenatal care program, improving literacy rate, controlling the fertility rate by safe and effective contraception, reproductive health status and by providing efficient health care facilities to these women at door step. With access to modern medical care and hospital delivery a favorable outcome can be achieved despite a low socioeconomic status. Pregnancy and labour should be closely supervised and early intervention arranged if it is not progressing smoothly.

The aim of my study was to find out hazards of grand multiparity in our setup so that appropriate measures can be taken to minimized the hazards.

METHODS

Descriptive cross-sectional study conducted in Department of Obstetrics and Gynecology from June 1, 2022, to January 31, 2023, at Hayatabad Medical Complex, Medical Teaching Institution, Peshawar, Pakistan. This study was conducted after getting approval from the Institution Research & Ethical Board dated 22-05-2022 with reference number 751/HEC/B&PSC/2022.

Different studies reported different prevalence of grand multiparas from 2.47% and 5.3% which calculated through world health organization (WHO) calculator as sample size n=38 and n=78 respectively. Hence, we taken fixed n=50 as an average and another reason was due to limited duration of study.

Fifty grand multiparous women across all age groups each carrying over five children between 37 and 40 weeks of gestation were clinically identified as singleton pregnancies and had their ultrasounds confirmed as such. Patients with intrauterine growth retardation, postdate pregnancy, previous cesarean section, multiple pregnancies, preterm pregnancy, and early rupture of the membrane, and great grand multiparity were not included in the study. The evaluation method included a detailed history, general physical examination, per abdominal and vaginal examination, and obstetrical ultrasound.

All collected were entered in Microsoft Excel 2020, then further analyzed through Statistical Package for Social Sciences 20. Mean, standard deviation, frequencies, and percentages were calculated for patients age, and other parameters of patients outcome.

RESULTS

The average age of the fifty patients (n = 40, 80%) was found to be between 31-40 years old, with a standard deviation of 4.49. Ten patients (20%) were older than this age range. After analyzing 50 patients it was found that 100% of them were un-booked came to labor room in an emergency without ante-natal care. Regarding ante-natal complication, it is analyzed that among 50 patients, 72% did not have any complication, 16% patients had pregnancy induced hypertension, and 12% patients had anemia.

Among total 50 patients, obstetrical complications were observed in which mal-presentation (n=7, 14%) was most frequently complication found, followed by Placenta Abruption, Placenta Previa, and Obstructed Labor (n=3, 6%) each. Shows that 4 (8%), had retained placentas, 2 (4 %) had perinatal tears, and 5 (10%) had postpartum hemorrhage owing to uterine atony. Among fifty patients, ten patients (20%) had caesarean sections, two patients (4%) required forceps delivery, and 38 patients (76%) had normal vaginal delivery. Among total 50 patients, n=3 (6%) had a caesarean hysterectomy due to uterine atony. It was also determined that none of the 50 patients had a mother death (Table 1).

Five minutes later, the new born Apgar scores was noted. Of them, at least forty-six (92%) newborns had a score more than six, while at least four (8%) babies had a score below six. Among total, N = 40 (80%) of the baby weighed between 2.5 and 4 kg at delivery, although n = 4 (8%), who were macrosomia, weighed more than 4 kg. Only 4 (8%) of babies admitted in the neonatal unit whereas n = 46 (92%) of babies were not admitted in the neonatal unit. Perinatal outcome of the grand multipara's was studied in which n = 48 (96%) babies were alive and n = 2 (4%), were intra-uterine death. There were no neonatal death (Table 2).

Table 1: Age (years), admission status, ante-natal complication, obstetrical complication, mode of delivery, post-partum complication, caesarean hysterectomy, and maternal mortality

Parameters		Frequency N (%)
Age (years)	>40 years	01 (02%)
	31-40	40 (80%)
	20-30	9 (18%)
Admission Status	Un-Booked	50 (100%)
	Booked	0 (0%)
Ante-natal Complication	Hypertension Disorders	8 (16%)
	Anemia	6 (12%)
	No Complications	36 (72%)
Obstetrical Complication	Placenta Abruption	3 (6%)
	Placenta Previa	3 (6%)
	Obstructed Labor	3 (6%)
	Mal-presentation	7 (14%)
	No Complications	34 (68%)
Mode of Delivery	Forceps Delivery	2 (4%)
	Caesarean Section	10 (20%)
	Normal Vaginal Delivery	38 (76%)
Post-partum Complication	Postpartum Hemorrhage (Uterine atony)	5 (10%)
	Postpartum hemorrhage (Retained placenta)	4 (8%)
	Postpartum hemorrhage (Perineal tears)	2 (4%)
Caesarean hysterectomy		3 (6%)
Maternal Mortality		0 (0%)

Table 2: Apgar score, Baby Birth Weight, Admission in the Neonatal Unit, Peri-natal Outcome

Parameters		Frequency (%)
APGAR Score	>6 after five minutes	46 (92%)
	<6 at five minutes in	4 (8%)
Baby Birth weight	Macrosomia >4kg	4 (8%)
	Normal Birth Weight	40 (80%)
	Birth weight <2.5kg	6 (12%)
Admission in the Neonatal Unit	Not Admitted	46 (92%)
	Admitted	4 (8%)
Peri-natal Outcome	Alive	48 (96%)
	Intra-Uterine Dead	2 (4%)
	Neonatal Death	0 (0%)

DISCUSSION

Grand multiparous women are significantly older than women with low parity. The incidence of grand multiparas at 31-40 years of age was 80%. This study which is also according to the previous studies.[13,14] This reveals an older age profile in multiparas. In this study, all patients were un-booked and admitted as emergency cases.

About 16% of the grand multiparous women had pregnancy induced hypertension (PIH). The results can be compared with other studies,[15] it is the advanced maternal age, genetic predisposition, vascular disease, renal parenchymal disease, social status, climate, maternal dietary habits and obesity which are important predisposing factors for its development.[16] According to this study, PIH has important role in development of abruption of placenta and intrauterine fetal deaths. Anemia in grand multiparas is due to poverty, malnutrition and frequent pregnancies. Consequently, there is an increase risks of infections, cardiac failure and loss of ability to overcome obstetric hemorrhage.[17] 12% cases were anemic in this study which can be compared with other studies.

Placenta previa is commonly encountered in older grand multiparas women.[18] Maternal age and parity correlate strongly for placenta previa. The incidence of placenta previa in grand multiparas in this study was 6% while Begum *et al.*, reported 5.2% placenta previa.[14] This is a serious risk factor for fetal viability and as well as affects the maternal health. Abruptio placenta has serious obstetric problem that tends to threaten fetal viability, neonatal mortality and morbidity and maternal health. The incidence of placental abruption was 6% in this study and in 16% of these patients' hypertension was the causative factor. These findings are comparable with other studies.[19]

The incidence of mal-presentation in this study was 14% while according to the previous study by Rajamajhi *et al.*, it was 16.98%.[20] Various fetal malpresentation are said to be common in GMP. Reduce tone of abdominal muscles, pendulous belly, fetal size, and congenital abnormalities are suspected causative factors.[21] Failure to predict and manage these malpresentations leads to obstructed labour and operative delivery which increases perinatal mortality, maternal morbidity and mortality. Obstructed labour results from failure of descent of fetal presenting part in the birth canal for mechanical reasons in spite of good uterine contraction.[21] Cephalopelvic disproportion, malpresentation, malposition and congenital fetal abnormalities are important risk factors for obstructed labour.[22] In grand multiparas women, malpresentation is more common than cephalopelvic disproportion. In this

study, 6% had obstructed labour, 14% malpresentation and 6% cephalopelvic disproportion were underlying causes for obstructed labour. About 5.6% of women experience obstructed labour according the previous study.[23]

In this study, 76% had spontaneous vaginal delivery, 20% delivered by caesarean section and 4% by outlet forceps. According to study by Rayamajhi *et al.*, 73.5% of grand multiparas had spontaneous vaginal delivery, 5.66% had instrumental delivery, and 15.1% underwent caesarean sections.[21] In consistent with our study, Begum *et al.*, study found that 50% delivered vaginally, 1.6% needed forceps delivery, and 51.6% needed caesarean sections.[14]

About 5.6% of women experience obstructed labor, according to another research.[14,23] In this study, 6% of participants had obstructed labor; malpresentation afflicted 14% of participants, and cephalopelvic disproportion (Macrosomia), the primary cause of obstructed labor, impacted 8% of individuals.

There is increase occurrence of post-partum hemorrhage in grand multiparas. Uterine atony is the most common cause of PPH due to increase fibrous tissue and decrease muscular tissues of uterus.[24] Other causes are retained placenta and perineal tears.[25] In this study, incidence of PPH due to uterine atony is 10% comparable to 11% in Nigerian study, retained placental 8%, comparable to 5.6% and perineal tear 4% in study by Rayamajhi *et al.*[21] 3 (6%) had Caesarean hysterectomy due to uterine atony.

There was no maternal death in this study similarly no maternal death in study by Rayamajhi *et al*.[21] In grand multipara perinatal outcome is influenced by all those factors which adversely affect pregnancy and labour and put them in group of dangerous multiparas. In this study, 96% were alive babies and 4% were intrauterine deaths. There was no neonatal death. Study performed by Bhide *et al.*, shows 95.5% alive babies and 4.5% intrauterine death.[26] Thus both results are comparable.

In this study, 80% of babies had 2.5-4kg birth weight and 8% were macrosomic with more than 4kg birth weight. This is comparable with study of begum where 79.4% had 2.5-4kg and 8.9% has more than 4kg birth weight. In this study APGAR score <6 at 5 minutes was 8% and it is 7.38% in study by Begum *et al*.[14] In this study incidence of admission to neonatal unit was 8% almost all admissions were due to birth asphyxia which is comparable to incidence of 9.43% in study of Rayamajhi *et al.*, Study.[21]

CONCLUSION

It is concluded from result of this study that Grand multiparity is still a major obstetrics hazard in our setup with its associated increase likelihood of maternal and perinatal complications. Cultural taboos prevent the use of contraception, shorter pregnancy interval, poverty, poor diet, inadequate health care, increase incidence of age-related risks and fetal macrosomia all predispose grand multiparas to increase hazards.

Excellent obstetrical outcome in grand multipara needs active interventions by improving literacy rate, health care facilities, safe and effective contraception and reproductive health status, women empowerment.

LIMITATIONS

This study's retrospective design, single-center data collection methodology, small sample size, and lack of multi-center data collection were its main drawbacks. Grand multiparas women report greater rates of several unfavorable pregnancy outcomes.

SUGGESTIONS / RECOMMENDATIONS

Pregnancy problems may be reduced with comprehensive obstetric care and specific attention to great multiparas. To properly understand this result, more long-term studies are required. Numerous health and obstetrical issues are linked to it. It is crucial to discuss the importance of family planning and the provision of careful prenatal care in areas where having a big family is desired.

CONFLICT OF INTEREST / DISCLOSURE

Authors have not conflict of interest.

ACKNOWLEDGEMENTS

We are grateful to the patients, family members and staff from all the units that participated in the study.

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