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ORIGINAL RESEARCH

Maternal and fetal outcome in grand multipara in a tertiary care hospital in north India

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ABSTRACT

The term, grand-multipara was introduced in 1934 by Solomon who called the grand-multipara the"dangerous multipara" (1). He concluded that maternal mortality increased steadily from the 5th to the 10th Pregnancy. "The International Federation of Gynaecology and Obstetrics (1993) defined grand-multiparity as delivery of the fifth to ninth viable pregnancies, whereas women who are undergoing their tenth (or more) delivery are considered to be great grand-multiparous or huge grand-multipara (3-6). Associated with pregnancy in a grand multipara, there is an increased risk of abortion, malnutrition, anaemia, multiple pregnancy, Rhesus isoimmunisation, antepartum, haemorrhage and preterm labour (7). Complications like diabetes, hypertension, malpresentations, cephalopelvic disproportions, uterine rupture, postpartum haemorrhage and puerperal complications are also more frequently encountered (8, 9, and 10).Grand multiparous women are also at a higher risk of low bone mineral density and osteoporosis as a result of aging and repeated extended lactation events, typically as a result of numerous pregnancies with short recovery intervals. Intrapartum complications commonly associated with grand multiparous women include uterine rupture, abruption placentae, placentae praevia, foetal malpresentation Rupture uterus is the gravest complication of high parity(11). Regarding postpartum complications postpartum haemorrhage is the leading cause of maternal deaths in countries of subSaharan Africa(12). **Aims of study:** To study the maternal outcome in grand multipara in terms of obstetriccomplications, medical complications and mortality.To study the immediate foetal outcome in grandmultipara in terms ofmorbidity and mortality and to find out the most common mode of delivery in grand multipara. **Material and methodology:** This study was a prospective time based observational study which was conducted in Government Lala Ded Maternity hospital Gmc Srinagar from time period of Aug 2017 to March 2019 after the approval from ethical committee. Relevant data was collected from medical record review and short interview and by conducting medical tests. The data was tabulated and analysed in a Microsoft Excel spread sheet. **Results:** Out of 120 patients 47.5% were in the age group of 35 -40 years ,32.5%in the age group of 30-35 and 20% in the age group of more than 40 years.61.7%were unbooked. 16.70% had malpresentation,12.5% had prematurity,12% had APH.6% had multiple pregnancy and 2.5% had abortion. Of all the medical complications 65% had anaemia,hypertension in 10% and diabetes in 5%.14.1% had CPD,9.1%had obstructed labour.In postpartum complications 13.3%had PPH followed by other complications.68.4% had vaginal delivery,5% had vacuum assisted delivery and 26.6% had LSCS. A total of 94.10% babies were born alive. 82% of these had an Apgar score ofgreater than 7. 17.6% of these had an Apgar score less than 7. 34.5% of the babies were reported to have Low Birth Weight and 35.3% were admitted in neonatal intensive care unit.

Keywords: APH, CPD, LSCS, PPH

INTRODUCTION

Obstetric morbidity is defined as "morbidity in a woman who has been pregnant (regardless of site or duration of pregnancy) resulting from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes". Complications of pregnancy are health problems that occur during pregnancy. They can involve mother's health, the baby's health, or both. Some women may have health problems that arise during pregnancy, and other women have health problems before they become pregnant that could lead to complications. According to world health organisation reproductive health problems account for more than one-third of the total burden of disease in women. Grand-multiparity has been differently defined in the literature. Some writers defined it as a woman with four or more parous experiences while others considered it as six or more (3). Prior to 1960 Grand multipara was considered to be 8 or more

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deliveries (4)The International Federation of Gynaecology and Obstetrics (1993) defined grand-multiparity as delivery of the fifth to ninth viable pregnancies, whereas women who are undergoing their tenth (or more) delivery are considered to be great grand- multiparous or huge grand-multipara(5-8). The pregnancy complications are directly related to parity and continue to be a challenge to the obstetricians. In terms of minimal risk the safest pregnancies are second, third and fourth. The hazards are greater in the fifth pregnancy and onward (9). In broad terms, the first pregnancy is a high risk pregnancy for both mother and baby, risk decreases in the second and third, and then increases again. The risk in the sixth pregnancy is more than in the first pregnancy, after which there is a steep increase.

COMPLICATIONS IN PREGNANCY

Pregnancies in grand multipara have been considered risky for many decades as various complications have been observed during pregnancy, labour and purpeurium with increased parity. Over the years these risks have been attributed to physiological changes as a result of high parity, maternal age, age related medical conditions and socio economic status. Associated with pregnancy in a grand multipara, there is an increased risk of abortion, malnutrition, anaemia, multiple pregnancy, Rhesus isoimmunisation, antepartum, haemorrhage and preterm(10). Complications like diabetes, hypertension, malpresentations, cephalopelvicdisproportions, uterine rupture, postpartum haemorrhage and puerperal complications are also more frequently encountered (11, 12, and 13). Grand multiparous women are also at a higher risk of low bone mineral density and osteoporosis as a result of aging and repeated extended lactation events, typically as a result of numerous pregnancies with short recovery intervals. The foetus/neonate of the grand multipara is also at a higher risk of low birth weight, preterm birth and congenital malformations.

COMPLICATIONS IN LABOUR

Grand multiparity has been described as an independent risk factor for a variety of serious intrapartum complications (19). Intrapartum complications commonly associated with grand multiparous women include uterine rupture, abruptio placentae, placentae praevia, foetal malpresentation (abnormal lie due to placenta praevia, pendulous abdomen or lumbar hyperlordosis with an increased pelvic inclination) and dysfunctional labour. Regarding postpartum complications postpartum haemorrhage isthe leading cause of maternal deaths in countries of sub Saharan Africa (21). These include primary and secondary haemorrhage, due to uterine atony, retained products of conception and trauma to the genital tract and perineum. Obstetrical haemorrhage is the most common avoidable cause of maternal deathand appears to be increasing according to South African statistics (22) Yves et al (4) explained the expected prevalence of postpartum haemorrhage in grand multiparous women to be related to a higher risk of uterine atony as a consequence of uterine muscle loss resulting in uterine laxity and the need for more postpartum oxytocin stimulation.

Reports in foetal outcome in grand multipara have differed across studies. The incidence of still birth, neonatal mortality, perinatal mortality, low birth weight, respiratory distress, and intraventricular haemorrhage and Broncho pulmonary dysplasia is high in grand multiparas. Thehypothesis being tested was that pre term deliveries occur in grand multiparas due to a multitude of medical conditions that women of advanced maternal age experience (36). Often these inductions and caesarean sections are done as emergencies, allowing little time to improve lung maturation, and this accounts for higher perinatal morbidity and mortality rates (36). Babies who experienced severe respiratory distress syndrome were shown to have poor outcomes that were often fatal after the first 24 hours of life.

AIMS AND OBJECTIVES

- To study the maternal outcome in grand multipara in terms of obstetric complications, medical complications and mortality.
- To study the immediate foetal outcome in grandmultipara in terms of morbidity and mortality.
- To find out the most common mode of delivery in grand multipara

MATERIAL AND METHODS

Study design

This study was conducted in Government Lala Ded hospital formtime period of Aug 2017 to March 2019 after the consent from ethical committee. This was a prospective observational study using medical record review and short interview and by conducting medical tests which include complete blood count, blood sugar, thyroid function test, iron profile, ultrasonography for effective foetal weight and all other obstetric parameters. Only those grandmultipara women who had delivered within the 24 hours before data was collected were included in the study. For a free sample size study I chose to study 120 grand multipara women attending the Lala Ded hospital.

Study population

The study included all births to grand multipara women attending LD hospital, the only tertiary level of maternity hospital in Kashmir. Majority of grand multipara women are being referred to Lala Ded hospital as high risk pregnancies due to shortage of facilities in these district hospitals, hence this study includes both booked as well as unbooked emergency cases. Most of the private hospitals are reluctant to take any such cases due to shortageof basic facilities

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in those hospitals and also majority of these cases are from low socio-economic background and hence cannot afford such private setup.

Inclusion criteria

Women who had five or more pregnancies reaching viability. This study included all the grand multiparas with their fifth viable pregnancy (≥26 weeks) who gave birth at Lala Ded hospital including IUD'S and still births after the period of viability.

Exclusion criteria

Women that had families of five children consisting of high order pregnancies i.e. sets of twins or triplets are excluded as they are not truly grand multiparas. For example, a woman may present as 'para 5' but gravida 3 as she may have delivered a set of triplets and therefore did not fit the requirement of grand multipara for this study.

Data collection

The delivery registers in the admission area, labour ward and caesarean section theatre were reviewed to find the grand multipara women whohad delivered the day before. The delivery registers in the labour ward recorded spontaneous normal vaginal deliveries as well as assisted vaginal deliveries, and the theatre register recorded women who had emergency caesarean sections or elective caesarean sections. The women who had delivered were then found in their respective post natal ward were a short interview was conducted and medical records reviewed, after written informed consent to use their clinical information in the study was obtained.

Data analysis

The data was tabulated in a Microsoft Excel spreadsheet.

RESULTS

This prospective study was conducted in Lala Ded Maternity Hospital in Srinagar Jammu and Kashmir. A total of 120 patients were included with the following details.

Maternal and fetal outcome in grand multipara attending LD hospital

TABLE NO.1 DEMOGRAPHIC DATA OF PATIENTS

VARIABLES	FREQUENCY(N=120)	PERCENTAGE
AGE		
30-35	39	32.50%
35-40	57	47.50%
>40	24	20%
SOCIOECONOMICSTATUS		
LOW	96	80%
MIDDLE	24	20%
HIGH	0	0
PARITY		
5	31	25.83%
6	43	35.84%
7	22	18.33%
8	9	7.50%
9	15	12.50%
BOOKED/UNBOOKED		
BOOKED	46	38.30%
UNBOOKED	74	61.70%

Majority of the patients were in the age group of 35-40 years with low socioeconomic status and minority of patients, 20% in the age group of >40years as depicted by the above table1.

TABLE NO.2 COMPLICATIONS IN ANTENATAL PERIOD

VARIABLES	FREQUENCYN=120	PERCENTAGE
ABORTION	3	2.50%
MALPRESENTATION	20	16.70%
MULTIPLEPREGNANCY	7	6%
APH	14	11.6%
PREMATURITY	15	12.5%

TABLE NO.3 MEDICAL DISORDERS

VARIABLES	FREQUENCYN=120	PERCENTAGE
ANAEMIA	78	65%

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HYPERTENSION	10	8.30%
ECLAMPSIA	3	2.50%
DIABETES	5	4.10%
EPILEPSY	1	0.80%
OTHERILLNESS	2	1.60%

The most common complication encountered in grand multipara was anaemia (79%), with majority having haemoglobin between 7-8 gm/dl and about 35% had a haemoglobin level <5 gm/dl. Hypertension was observed in 10% cases. Eclampsia occurred in 3%cases. Diabetes mellitus was found in 5% of cases.

TABLE NO.4 INTRAPARTUM COMPLICATIONS

VARIABLES	FREQUENCYN=120	PERCENTAGE
CORDPROLAPSE	5	4.10%
CEPHALOPELVIC DISPROPORTION	17	14.10%
OBSTRUCTED LABOUR	11	9.10%
RUPTUREUTERUS	3	2.50%

In the current study 14.10% women had cephalopelvic disproportion followed by 9.1% with obstructed labour 4.1%cord prolapse and 2.5%rupture uterus

TABLE NO.5 POSTPARTUM COMPLICATIONS:

VARIABLES	FREQUENCYN=120	PERCENTAGE
POSTPARTUM HAEMMORAGHE	16	13.30%
RETAINED PLACENTA	5	4.20%
UTERINE IN VERSION	1	0.80%
THIRD DEGREEPERIANAL TEAR	4	3.30%
HYSTERECTOMY	6	5%
MATERNALMORTALITY	3	2.50%

Haemorrhage was the most common post partum complication in our study, occurring in 13.3% of the study population. Retained placenta was observed in 4.2%. Almost all cases with retained placenta were brought to hospital after home delivery. One case of uterine inversion was reported and that too had home delivery. There were 3 maternal deaths, one was due to massive atonic PPH leading to irreversible haemorrhagic shock. Two patients expired due to CHF because of severe anaemia. One of which expired in immediate postpartum period after caesarean section and the other in her antenatal period at 32 weeks of gestation.

TABLE NO.6 MODE OF DELIVERY

VARIABLES	FREQUENCYN=120	PERCENTAGE
NORMALVAGINAL	82	68.40%
VAGINALASSISTEDVACUUM	6	5%
FORCEPS	0	0%
CAESAREANSECTION	32	26.60%

Majority of the Grandmultipara women (68%) had normal vaginal delivery. 27% underwent caesarean section and the common indications were foetal distress, non-progression of labour, breech presentation and cephalopelvic disproportion.

TABLE NO. 7 IMMEDIATE FOETAL OUTCOME

VARIABLES	FREQUENCY N=120	PERCENTAGE
LIVE BIRTH	115	95.8%
APGAR SCORE≤7	20	17.30%
APGAR SCORE≥7	95	82.6%
LOW BIRTH WEIGHT	39	33.9%
STILL BIRTH	5	4.1%
ADMISSION IN NICU	40	34.7%

A total of 94.10% babies were born alive. 82% of these had an Apgar score ofgreater than 7. 17.6% of these had an Apgar score less than 7. 34.5% of the babies were reported to have Low Birth Weight and 35.3% were admitted in neonatal intensive care unit.

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DISCUSSION

In this study out of 120 grand multipara women most of the women reported no antenatal care and lived in distant areas from the city. We also found a higher number of these women in age group 35 – 40 years with low socio economic status, majority being unregistered. In our study 16.7% of the women were reported with malpresentation and Breech was the most common malpresentation. Baskett et al (13) highlighted that malpresentations were common in grand multipara women (9%) when compared to overall hospital incidence (5%). Multiple pregnancy is about 3 times as common in grand multipara. Mc Gillivrari also found that twinning increase with maternal age (14). In our study 12% of grand multipara women reported with ante partum haemorrhage. Placenta praevia likewise is more common in direct proportion to the patient's parity. Bai et al (15) found the occurrence of antepartum haemorrhage in grandmultipara women (5.8%) was higher than in the total obstetric population they studied (2.3%).

In our study the most common complication encountered in grand multipara was anaemia (79%), with majority having haemoglobin between7-8% and about 35% had a haemoglobin level<5gm/dl. Bugg et. Al (16) showed an increase incidence of antenatal anaemia in grandmultiparous women.

In our study, out of 120 cases, 10 cases had hypertension as antenatal complication and 3 cases had eclampsia.

In our study 14% of the grandmultipara women had cephalopelvic disproportion. Babies tend to get larger with successive pregnancies, and may consequently give rise to cephalopelvic disproportion for the first time. In grand multiparity there may be subsequent reduced pelvic capacity also due to pelvic skeletal changes.

Uterine rupture constitutes one of the gravest risk of high parity. In our study 3 of the grand multipara cases presented with uterine rupture. Maximum cases of maternal deaths in current study are due to haemorrhagic shock due to rupture uterus or other causes. 5 cases out of 120 grandmultipara women had cord prolapse. Malpresentation and malposition due to the pendulous abdomen together with high angle of pelvic inclination resulting from associated lordosis of the spine may favour cord prolapse. 11 out of 120 cases of grandmultiparous women presented with obstructed labour and were managed accordingly.

In our study 16 out of 120 cases had postpartum haemorrhage. Postpartum haemorrhage is a real risk, because the uterus seldom demonstrates willingness to contract and in fact haemorrhage may follow precipitate labour. Maternal mortality rises with higher degrees of parity, increasing progressively with each child after the fifth delivery. Rupture uterus, chronic hypertensive disease and placental complications are some of the important causes that contribute to both morbidity and mortality, although mortality can now be prevented in most cases with good obstetric care. The puerperal morbidity rate is not increased unless major complications arise during labour (17). In the current study we witnessed 3 maternal deaths one was due to massive atonic postpartum haemorrhage leading to irreversible haemorrhagic shock. Two patients died due to congestive heart disease because of severe anaemia, one of which died in immediate postpartum period after caesarean section and the other died in her antenatal period at 32 weeks of gestation. Operative deliveries, both instrumental and caesarean section, are also increased due to the higher incidence of macrosomia and the consequent interventions. In our study 82 cases had normal vaginal delivery followed by 6 cases having vaginal assisted vacuum delivery and 32 cases delivered by caesarean delivery and common indications were foetal distress, non-progression of labour, breech presentation and cephalopelvic disproportion. Frequency of caesarean delivery is high due to increased incidence of intrapartum complications especially dysfunctional labour, malpresentation and placentaprevia.

CONCLUSION

The grand multiparty is still a major obstetric hazard in our set up with higher incidence of complications. Lack of contraceptive measures, closely spaced pregnancies, poor diet, poverty and inadequate health care facilities, all predispose to increased maternal complications. A multidisciplinary approach involving efforts from social circles, non-government organisation and most importantly trained birth attendants can bring about a miraculous change. All these patients should certainly not go home without accepting a suitable and effective method of contraception, of which there are now sufficient choices to satisfy all situations.

REFERENCES

1. SolomonB.Thedangerousmultipara.Lancet,1934;2:8-11.
2. OxornH.HazardsofGrandMultiparity.ObstetGynecol1955;5:150-156
3. Ogbe, A.E., Ogbe B.P. and Ekwempu C. Obstetric outcome in grand-multiparous women in Jos University Teaching Hospital. Jos Journal ofMedicine,2010;6:1-5.
4. DieJomaoh F.M.E., Omene J.A., Omu A.E. and Faal M.K.B. Theproblems of grandmultiparity as seen at Benin Teaching Hospital, Benin-City, Nigeria. Tropical Journal of Obstetrics and Gynaecology, 1985; 5:13-17.
5. Eze J.N., Okaro J.M. and Okafor M.H. Outcome of pregnancy in thegrandmultipara in Enugu, Nigeria. Tropical Journal of Obstetrics andGynaecology,2006;23:8-11.
6. Kuti O., Dare F.O. and Ogunniyi S.O. (2001) Grandmultiparity:Mothers own reason for the index pregnancy. Tropical Journal ofObstetrics andGynaecology,2001;18:31-33.
7. Bibinski A, Kerenyki T, TorokoGrazi V, Lapinski RH, BerkowitzRL. Perinatal outcome in grand and great

DOI: 10.69605/ijlbpr_14.3.2025.1

grand multiparity; effects ofparity on obstetrics risk factors. Am J ObstetGynaecol 1999; 181: 669-674
8. Bayoumev F, Subiran-Buisset C, Baka NF, Legagneut H, Monnier-Barbarino P, Laxenaire MC. Iron therapy in iron deficiency anaemia inpregnancy: Intravenous versus oral route. Am J ObstetGynaecol 2002;186: 518-22
9. ArroyaZ,Yochai T,SilberskinM,FrigerM,HallakM,KatzM,etal. Oxytocin use in multi parous patients . Safety and complications. JMarteen FetalMed2001;10:328-31
10. Sablock U, Lindow SW, Arnott PE, Mason EA. Pre-pregnancycounselling for women with medical disorders. J ObstetGynecol 2002;22(6): 637-8.
11. Ummi H, Zaibunnisa K, Manzoor A. A review of 66 cases of ruptureduterus in a district general hospital.J Post grad Med inst. 2002;16(1):49-54
12. Fawcus S, Moodley J. Management of postpartum haemorrhage. S Afr JObstetGynaecol2011;17(2):26
13. BaskettTF.Grandmultiparity–acontinuing threat;a6-yearreview.CMAJ1977;116:1001-1004
14. MacGillivray I. Preeclampsia. In: MacGillivray I, eds. The HypertensiveDiseaseofPregnancy.1st ed.London:WBSaunders; 1983Bai J, Wong FWS,
15. Bauman A, Mohsin M. Parity and pregnancyoutcomes.AmJ ObstetGynecol2002;186:274-278
16. Bugg GJ, Atwal GS, Naresh M. Grand multipara in a modern setting. BrJ ObstetGynaecol 2002; 109:249-253.
17. Donald I, (1969)-Practical Obstetrics problems. Ed.4, London, LioudLukeLtd.