

## COMPARISON OF INCIDENCE, INDICATION AND COMPLICATION OF PRIMARY CESAREAN SECTION IN PRIMIGRAVIDA AND MULTIGRAVIDA

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### ABSTRACT

**Background:** To compare the indications, incidence and complication of primary cesarean section performed in primigravida to that in multigravida **Methods :** This was a prospective study carried out in Umaid Hospital, Department of obstetrics and gynecology, attached to Dr.S.N. Medical College, Jodhpur from 1st march 2013 to 31st May 2013. All patients who delivered vaginally or abdominally during this period were calculated. Those who had a primary cesarean section were considered as cases. Indication for cesarean section was noted before operation. All complications were observed and noted till the discharge of the patient. Calculations were made separately for primigravida and a multigravida and the results were compared. Statistical analysis was done by chi square test of significance. **Result:** During this period 2179 primigravida and 2802 multigravida were delivered of which 475 primigravida had a cesarean section and 275 multigravida had a primary cesarean section. Incidence of primary cesarean section was higher in primigravida. Fetal distress and CPD were the most common indications in both primigravida and multigravida. Incidence of APE was higher in primigravida whereas the incidence of APH was higher in multigravida. Incidence of blood transfusion was higher in multigravida. Incidence of wound gape was statistically higher in multigravida. **Conclusion :** First labor of women needs to be well managed to reduce cesarean section rates. Incidence of APE can be reduced by good antenatal checkups. Multigravida runs a higher risk of morbidity which emphasizes the need of improving the health status of women in reproductive age group and better implementation of family planning services.

**Keywords** Cephalopelvic disproportion (CPD), Antepartum eclampsia (APE), Antepartum hemorrhage (APH), Postpartum hemorrhage (PPH)

### INTRODUCTION:

The incidence of cesarean section has doubled or tripled all over the world in the last 15 years (1). Though modern technology and facilities have made this operation remarkably safe, but still

cesarean section is associated with increased risk of maternal morbidity and mortality as compared to vaginal delivery as well as it also complicates the management of subsequent pregnancies. Also

this increase in cesarean rate has not contributed significantly to the simultaneous observed reduction in perinatal mortality (2). Hence the primary cesarean section performed on a woman is of much obstetric significance and needs an in depth study. Furthermore, the two groups, primigravida and multigravida show significant variation in terms of indications and complications of primary cesarean section and require separate evaluation.

The purpose of this study is to compare the incidence, indication and complication of primary cesarean section in primigravida and multigravida so that the aspects which need due attention in either group could be differentiated and better obstetric management could be given to them.

## MATERIAL AND METHODS

This was a prospective study carried out in Umaid Hospital, Department of obstetrics and gynecology, attached to Dr.S.N. Medical College, Jodhpur from 1<sup>st</sup> march 2013 to 31<sup>st</sup> may 2013. All patients who delivered vaginally or abdominally during this period were considered and were divided into two groups-primigravida and multigravida. Patients who had primary cesarean section were taken as cases. Patients with non viable pregnancy or ectopic pregnancy were excluded. Thorough history was taken and complete examination done. Vitals were recorded and patients were closely monitored in labor room for fetal heart rate and progress of labor. Indication for cesarean section was noted before the operation was done and any intraoperative or postoperative complication were observed and noted till the discharge of the patient from the hospital. Normal labor register, which contains data of each and every delivery conducted in Umaid Hospital, was used to find

out total number of deliveries and cesarean section during the study period.

Calculations were made separately for primigravida and multigravida and expressed in percentage and results were compared. Statistical analysis was done by chi square test of significance using the epi – info package and P value < 0.01 was considered significant.

## RESULTS

There were total 4981 deliveries during this period of which 2179 were primigravida and 2802 were multigravida. 475 primigravida were delivered by cesarean section and 275 multigravida had primary cesarean section. The incidence of primary cesarean section is much higher in primigravida (21.80%) than multigravida (9.81%) (p value <0.001) as in table 1. Thus the first labor and mode of delivery of a patient plays a pivotal role in increasing the overall rate of cesarean section.

On comparing the indications of cesarean section in two groups (table 2), fetal distress accounted for 32.21% cases in primigravida while it was an indication for 17.45% cases in multigravida (p value <0.001). Other indications were comparable in both the groups except for APE and APH. In primigravida, APE was responsible for 4.42% cesarean sections as compared to 0.73% cases in multigravida (p value <0.01). With respect to APH, abruptio placenta was an indication in only 1.89% of cases in primigravida whereas in multigravida it lead to cesarean section in 12.73% cases (p value <0.001). Also placenta previa was an indication in 8.73% cases in multigravida while there was no cesarean section in primigravida for this indication (p value <0.001). Thus wherein fetal distress and APE requires due concerns in primigravida, APH needs special attention in multigravida.

Multigravida required blood transfusions in 15.27 % cases of primary cesarean section which reveals their poor health status as well as increased risk of morbidities due to cesarean section in them. Comparatively 2.94% cases needed blood transfusion in primigravida (p value < 0.001) (table 3).

Other intraoperative and postoperative complications are comparable in both the groups (table 4).

## DISCUSSION

In the present study, the incidence of primary cesarean section in primigravida is significantly higher than that in multigravida. In the study by Kiyoko M Parish in 1994, primary cesarean section rate ranged from 3.2% for multiparous teenage women to 50.9% for primiparous teenage women (3). This reveals that if first labor of a woman is well managed, overall rate of cesarean section can be reduced significantly.

In the present study, fetal distress and CPD were the most common indications of primary cesarean section in both the groups. This correlates with the studies of A.A.Sobande et al (1997-99) (4) and of Kolawole A.O.D. et al (2011) (5) done on primigravida. Study of primary cesarean section in multipara by Desai et al (6) revealed fetal distress as the most common indication (25.58% cases) and APH was an indication in 22.09% cases. Study of Himabindu et al (2015) (7) on primary cesarean section on multipara had fetal distress as an indication in 24.7% cases and APH as an indication in 11.2% cases. Present study also compares the various indications of cesarean section in either group and reveals that where other indications have comparable incidences in either group, fetal distress and APE significantly

increase the operation rate in primigravida whereas in multigravida, the same credit goes to APH i.e., abruptio placenta and placenta previa. Sibai et al (8) states that the presence of eclampsia is not an indication of cesarean delivery. Study by Gaddi Suman S (9) reveals that the incidence of eclampsia is more in population with no prenatal care. From this we can conclude that in primigravida, a good antenatal checkup must be stressed on to prevent incidence of APE and thus lesser women will have to face the operative morbidities. In multigravida, an optimal health status, early diagnosis, timely referral and proper birth spacing by effective implementation of family planning services are the key points to reduce associated maternal morbidities like PPH, disseminated intravascular coagulation and blood transfusions and fetal morbidity and mortality.

In present study, incidence of blood transfusion is significantly higher in multigravida. Study by A.A.Sobande et al (1997-99) (4) had blood transfusion in 1% cases of primary cesarean section on primigravida. Study by Himabindu et al (2015) (7) had blood transfusion in 29% cases of primary cesarean section on multigravida. As anemia is a major health issue, women usually cannot cope up with the extra blood loss of cesarean section and need blood transfusions. Blood loss due to other reasons like APH in multigravida multiplies the problem. Therefore women, especially multigravida, need good supplements and their nutritional status need to be improvised. Also proper birth spacing by contraceptive practice is a must so that a woman can deliver her future children in a healthy physical and mental state.

In present study, where other complications are comparable in both groups, incidence of wound gape is significantly higher in multigravida. This again points towards the poor preoperative

maternal condition like anemia and malnutrition more prevalent in multigravida. Incidence of wound gape in Kolawole A.O.D. (5) studies on primigravida was as high as 14% whereas that in Sethi et al (2014) (10) study on multigravida, it is 6% which is comparable to present study with incidence of 6.18% multigravida cases suffering wound gape. Most common complication in both groups was respiratory tract infection in the present study.

Advantage of the present study is that being a prospective study, there was no case selection bias. All cases during the three month duration of study were included. There were total 4981 deliveries during this period of which 2179 were primigravida and 2802 were multigravida. 475 primigravida were delivered by caesarean section and 275 multigravida had primary caesarean section. Thus, the present study involves a good number of patients to conclude the results upon. The present study compares the various aspects of caesarean section on primigravida and multigravida. Hence to reduce the incidence of this operation and its associated morbidities, besides general measure, the present study reveals what special measures are required in specific group. Also there was no mortality in the present study due to the good quality of emergency obstetric services and blood bank.

Disadvantage of this study is that the labor room lacks the facility of electronic fetal monitoring, fetal scalp blood sampling etc. Intermittent auscultation of fetal heart and clinical observation of maternal condition makes the base of labor management. Hence in some cases, overdiagnosis cannot be ruled out especially when caesarean section is indicated for fetal distress which is the most common indication in both groups.

## CONCLUSION

Thus, to conclude, the rate of primary caesarean section in primigravida is increasing as elsewhere and is higher than multigravida. So to reduce the rate of caesarean section, first labor of woman is to be well managed. Most common indications for caesarean section are fetal distress and CPD. Electronic fetal monitoring, fetal scalp blood sampling and intrapartum fetal pulse oximetry for fetal surveillance would reduce some unnecessary operations. A well applied policy on active management of labor and meticulous use of partograph will reduce the incidence of dystocia. Health awareness will increase the antenatal visits and reduce the incidence of complications like APE. Primary caesarean sections in multigravida constitute only a small percentage of total deliveries but run a greater risk during pregnancy and labor. This risk can be effectively reduced by providing good antenatal care, effective family planning measures and health education to patient and thorough care and vigilance in the management of labor. Also grandmultigravida is a condition to be prevented. Further, measures should be taken to reduce childhood malnutrition and to encourage education of the girl child. This will ultimately improve the level of utilization of health facilities by women during their reproductive age and thus would improve the obstetric outcome. There is need for strong and quick networking with peripheral hospitals and encouraging prompt referral of high risk and difficult cases so that obstetric emergencies reach a specialized institution earlier and a proper management could be done before the consequences become grave.

Finally, as Williams preached “the excellence of an obstetrician should be gauged not by the number of caesareans which he performs, but rather by those which he does not do”.

No conflict of interest

## REFERENCES

1. Shukla Ashok Kumar and Dalal Asha R (No Date). Changing Trends in Indications of caesarean section. Available: [www.bhj.org.in/journal/2006\\_4801\\_jan/html/org\\_Changing\\_105-110.html](http://www.bhj.org.in/journal/2006_4801_jan/html/org_Changing_105-110.html) (as on 27- 02-15).
2. O'Driscoll K, Foley M. Correlation of decrease in Perinatal mortality and increase in caesarean section rates. *Am J Obstet Gynecol* 1983; 61 (1): 1-5.
3. Kiyoko M Parrish, Victoria L Holt, Thomas R Earterling, Frederick A Connell, James P Logerfo. Effect of changes in maternal age, parity and birth weight distribution on primary caesarean delivery rates, *JAMA* March 1994; 271 (6): 443-47.
4. Sobande A A, Archibong E I and Eskandar M. Primary caesarean section in nulliparous and grandmultiparous Saudi women from the Abha region: indications and outcomes. *WAJM* Sept 2003; 22 (3): 232-235.
5. Kolawole A O D, Onwuhuaafua P, Adesiyun G, Oguntayo A, Mohammed Duro A. Audit of primary caesarean sections in nullipara seen in Ahmadu Bello University Teaching Hospital, Kaduna. *Australian Journal of Basic and Applied Sciences* 2011; 5 (6): 1088-1097. ISSN 1991-8178.
6. Sibai M Bham. Diagnosis, prevention and management of eclampsia. *The American College of Obstetricians and Gynecologists*. Feb 2005; 105 (2): 402-410.
7. Gaddi Suman S, Somegowda. Maternal and Perinatal outcome in eclampsia in a district hospital. *J Obstet Gynecol India* July/Aug 2007; 57 (4): 324-326.
8. Desai E, Leuva H, Leuva B, Kanani M. A study of primary caesarean section in multipara. *Int J Reprod Contracept Obstet Gynecol* 2013; 2 (3): 320-324. doi: 10.5455/2320-11770. ijrcog 20130912.
9. Himabindu P, Tripura Sundari M, Sireesha K V, Sairan M V. Primary caesarean section in multipara. *IOSR-JDMS* may 2015; 14 (5) ver VI: 22-25, eISSN: 2279-0853, pISSN: 2279-0861.
10. Sethi P, Vijaylaxmi S, Shailaja G, Bodhare T, Devi S. A study of primary caesarean section in multigravidae. *Perspectives in Medical Research* May-Aug 2014;2 (2): 3-7.

Table 1: Comparison of incidence of primary caesarean section in primigravida and multigravida

	<b>Primigravida</b>	<b>Multigravida</b>
<b>Total deliveries</b>	2179	2802
<b>Number of primary caesarean section</b>	475	275
<b>Percentage of primary caesarean section</b>	21.80	9.81

Table 2: Comparison of indication of primary caesarean section in primigravida and multigravida

Indication	Percentage of cases in Primigravida	Percentage of cases in Multigravida	Significant P values
Fetal distress	32.21	17.45	<0.001
CPD	13.4	13.82	
Breech	12.63	10.18	
Failed progress	10.7	8.73	
S.PIH	9.26	9.09	
Obstructed labor	8.2	6.54	
Oligohydroamnios	6.53	7.64	
IUGR	6.31	4.73	
Failed induction	6.10	3.64	
APE	4.42	0.73	<0.01
Fetal hypoxia	3.16	2.18	
PROM	2.10	4.73	
Abruptio placenta	1.89	12.73	<0.001
UPI	1.68	2.54	
Precious pregnancy	1.68	0.73	
DTA	1.47	0.73	
Transverse lie	1.26	5.45	
Brow presentation	0.84	1.09	
Cord prolapse	0.63	1.45	
Face presentation	0.21	0.73	
Impending eclampsia	0.21		
BOH		11.27	
Placenta previa		8.73	<0.001
Impending rupture		0.73	
Vasa previa		0.36	
Cord presentation		0.36	
Medical indication		0.36	

Table 3: Comparison of incidence of blood transfusion in primigravida and multigravida

	Primigravida	Multigravida	P value
Incidence of blood transfusion in percentage	2.94	15.27	<0.001

Table 4 :Comparison of complication of primary caesarean section in primigravida and multigravida

Complication	Percentage in Primigravida	Percentage in Multigravida	Significant P value
Uterine atony and PPH	5.89	8.73	
Extension of uterine incision	2.11	2.18	
Bladder injury	2.11	1.45	
PPH	1.26	2.91	
Respiratory tract infection	5.89	7.27	
UTI	2.95	4	
Wound gape	2.53	6.18	<0.02
PPE	1.05		
Paralytic ileus	1.05	1.09	
Septicemia	0.42		
Postpartum psychosis	0.42	0.36	
Endometritis		0.36	
DIC		0.36	