

Demographic profile in women undergoing second stage caesarean section

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ABSTRACT

Background: Incidence of caesarean section is rapidly rising over the last two decades and 25% is contributed by second stage caesarean section. Demographic factors influencing fetomaternal outcome in second stage caesarean section include BMI, socioeconomic status, booking/unbooking status, gravidity and maternal height.

Methods: The present study was prospective observational study conducted in the department of obstetrics and gynaecology at Lady Hardanger Medical College New Delhi from December 2015 to March 2017. 80 women were enrolled in the study. A detailed history and examination of each patient was carried out. Women were observed during lab our till second stage caesarean section.

Results: Mean age of population was 25.26 ± 3.75 ranging from 19-40 year. 76.25% included in study were booked and 11.25% were unbooked, 42.5% belonged to lower middle class and 31.25% belonged to upper middle class. 47% women had height of <150 cm and 70% had a BMI between (25-29.9) kg/m. 43% women had gestational age between 39-40 weeks.

Conclusions: Second stage caesarean section was more common in young age group and primigravidae. Higher BMI was not only operative but obstetrical risk as well.

Keywords: Demographic factors, Raised body mass index, Second stage caesarean

INTRODUCTION

Incidence of caesarean section is rapidly rising over the last two decades ranging from 0.4-42.3%.^{1,2} Second stage caesarean section contributes to 25% of all caesarean section done.³ There are demographic factors which influence the fetomaternal outcome in second stage caesarean section includes BMI, socioeconomic status, booking/unbooking status, gravidity and maternal height. Neonatal mortality and morbidity due to hypoxia and fetal trauma remains to be one of the major issues regarding the caesarean section performed in the second

stage of labour.⁴ Thus the rising rate of caesarean section at full cervical dilatation is not only a concern for the delivery in question but it also may have negative impact on women's future pregnancy and deliveries.⁵

Objective of this study was to study demographic profile in women undergoing second stage caesarean section.

METHODS

The present study was prospective observational study conducted in the department of obstetrics and

gynaecology at Lady Hardinge Medical College and Smt. Sucheta Kriplani Hospital, New Delhi from December 2015 to March 2017. After clearance from institutional ethical committee, 80 women were enrolled in the study after fulfilling the inclusion and exclusion criteria. Inclusion criteria includes all uncomplicated term pregnancy with period of gestation, singleton pregnancy with cephalic presentation in second stage of labour. Exclusion criteria are women not giving consent, intrauterine death, multiple pregnancy, gross congenital anomaly and with medical disorders like DM, HTN, prev-LSCS, APH, anaemia.

A detailed history of each patient was carried out including chief complaints, LMP, EDD, onset of labour pains, presence of LPV and referral from other hospital. Baseline maternal data with regard to age, parity, POG, demographic data, BMI recorded. Through history was taken to rule out any other systemic illness. Period of gestation was calculated from LMP and confirmed by ultrasonography. This was followed by general physical examination, systemic examination and obstetric palpation and pelvic examination as per Performa. The vitals of women including pulse rate, blood pressure, height, weight, and BMI were recorded. Relevant investigations as per protocol of the department were done in predesigned format. A partographic management of labour was done. Women were observed during labour and followed till caesarean section in second stage of labour.

RESULTS

Total number of deliveries during this period was 22014, out of which NVD were 17165 and caesarean deliveries were 4849. Thus, caesarean section rate was 22% out of which 3.9% caesarean sections were done in second stage of labour. Second stage CS compared to 1st stage is associated with increased complications.

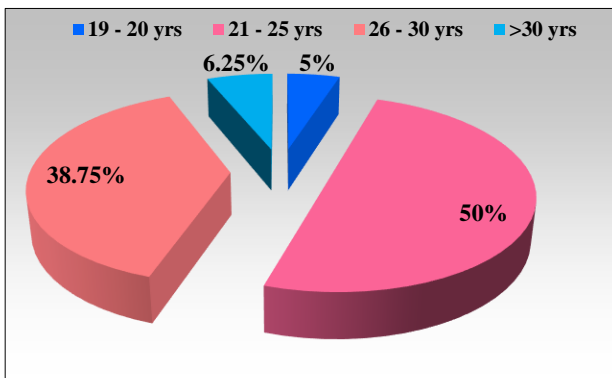


Figure 1: Distribution of women according to age group.

Figure 1 show that mean age of population was 25.26±3.75 ranging from 19-40 year. 50% were between age group 21-25 years, 38.75% were between age group

26-30 years, 6.25% had age group > 30 years and 5% had age group 19-20 years.

As shown in (Table 1), 61 out of 80 women (76.25%) included in study were booked and 9 out of 80 women (11.25%) were unbooked. 10 out of 80 women (12.5%) were referred second stage of labour with full dilatation of cervix.

Table 1: Distribution of women according to booking and referral status.

Booked / unbooked / referred	Number of women (n)	%
Booked*	61	76.25%
Unbooked	9	11.25%
Referred	10	12.5%
Total	80	100%

*A woman was considered to be booked on having at least 3 antenatal visits.

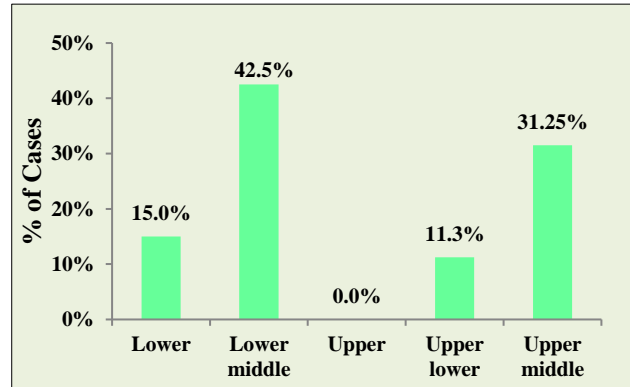


Figure 2: Distribution of women according to socioeconomic status.

Figure 2 shows distribution of women according to socioeconomic status as per modified Kuppuswamy classification. It was observed that 42.5% belonged to lower middle class and 31.25% belonged to upper middle class, 15% belonged to lower class and 11.3% belonged to upper lower class.

Table 2: Distribution of women according to gravidity.

Gravidity	Number of women (n)	%
G1	50	62.5%
G2, G3	29	36.25%
G4 ≥	1	1.25%
Total	80	100%

As it is shown in (Table 2) that maximum number of women 50 out of 80 (62.5%) were primigravidae and 36.25% were 2nd and 3rd gravida. Only 1.25% women were G4.

Table 3 shows 8.75% of women were illiterate, 23.75% of women had education level of primary, 36.25% had an education level of higher secondary and 31.25% were graduate.

Table 3: Distribution of women according to education status.

Education level	Number of women (n)	%
Illiterate	7	8.75
Primary	19	23.75
Higher secondary	29	36.25
Graduate	25	31.25
Total	80	100

Table 4: Distribution of women according to the height.

Height (cm)	Number of women (n)	%
≤ 150	38	47.5
151-155	30	37.5
156-160	10	12.5
> 160	2	2.5
Mean±SD	152.14±3.7	
Range	147-161 cm	

Table 4 shows that the mean height of the total population was 152.14±3.7 cm ranging between 147 to 161 cm. Out of 80 women from the study group 38 women (47.5%) had height less than 150 cm. Whereas 30 women (37.5%) had height between 151-155 cm, 10 women (12.5%) had height of 156-160 cm and 2 women (2.5%) had a height of > 160 cm.

Table 5: Distribution of the women according to the BMI.

BMI	Number of women (n)	%
< 18.5	0	0
18.5-24.9	13	16.2%
25 - 29.9	56	70%
≥ 30	11	13.8%
Total	80	100%
Mean ±SD	27.19±2.26	
Range	21.6-31.2 cm	

Table 6: Age and parity of women in other studies.

Authors	Number of cases	Mean maternal age in (years)	Gravidity	
			Primi	Multi
Moodley ⁶ et al	53	23.79±5.7	70%	30%
Asicioglu ⁷ et al	298	27.5±2.9	-	-
Alexander ⁸ et al	2716	26.7±6.4	74%	26%
Malathi J ⁹ et al	50	-	74%	26%
Jain et al ¹⁰	50	-	80%	20%
Present study	80	25.26±3.75	63%	37%

A total 47.5% women had a height < 150 cm, as majority of women were of short height suggesting that short height is the risk factor for women in labour who require second stage caesarean section

On analysing (Table 5) it was observed that mean BMI was 27.19±2.26 and ranged from 21.6-31.2. 70% had a BMI between (25-29.9) kg/m² and 13.8% had a BMI ≥ 30. 16.2% had BMI between 18.5-24.9.

On analysing (Figure 3) it was found out that 11 women out of 80 were of gestational age < 38 weeks, 20 women had gestational age of 38-39 weeks, 35 women belonged to gestational age of 39-40 weeks, 12 women had gestational age between 40-41 weeks and only 2 women had gestational age of > 41 weeks.

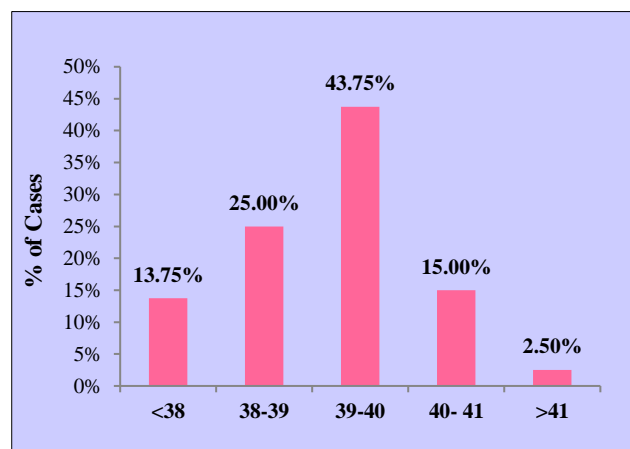


Figure 3: Distribution of women according to gestational age.

DISCUSSION

The present prospective observational study conducted in the department of obstetrics and gynaecology at Lady Hardinge Medical College New Delhi from December 2015 to March 2017.

Caesarean section rate was 22% out of which 3.9% caesarean sections were done in second stage of labour.

Table 6 shows mean maternal age and gravidity in present study and in different studies. In the present study, the mean age was 25.26 ± 3.75 years which were comparable to the studies by Moodley et al, Asicioglu et al, and Alexander et al, (27.5 ± 2.9 years).⁶⁻⁸ The reason for having younger women in the study could be due to early age of marriage and this reproductive age group being most fertile group.

A total 62.5% of women were primigravidae which is almost comparable to studies done by Malathi J et al, and Jain et al.^{9,10} This could be due to various reasons such as inability to diagnose occipito posterior position and CPD at an early stage of labour by attending obstetrician. Lack of experience of previous labour in this group of women could also be another reason, thus predisposing them to have more of dysfunctional labour.

A total 57.5% of women belonged to lower class, out of which majority 42.5% were lower middle and 15% lower. Women belonging to lower class have poor compliance for antenatal visit and institutional delivery thus attending hospital at a very late and advanced stage of labour with either impending obstruction or in a state of obstructed labour.

A total 36.25% women were educated up to higher secondary level and 31.25% had an education level of graduation. In the present study level of education was not found to have any relationship with second stage caesarean section.

Total number of booked patients were 76.25%, unbooked were 11.25% and referred patients were 12.5%. Unbooked and referred patients were more prone to have increased maternal and fetal morbidity as compared to booked patients. Referred patients were also unbooked and presented in our centre in the advanced labour with obstruction and had complication of bladder injury 30%, extension of incision in 55%, PPH in 50%, blood transfusion in 30% and still birth in 1.25%.

In this present study majority of women had BMI between 25-29.9 kg/m² and 13.8% had BMI of ≥ 30 which was comparable to the study done by Sucak et al, Prameela et al, and Das S et al.¹¹⁻¹³ Thus it appears that obesity is not only an operative risk factor but also an obstetric risk factor as well.

The importance of height as an index of pelvic adequacy and moreover of reproductive efficiency has been studied by Baird.¹⁴ According to this study as the height of mother decreases, the rate of caesarean section rises. He had shown that reproductive performance is best in women who are 162 cm or more in height.

In the present study the gestational age of women undergoing second caesarean section was ranged from 37 weeks to 41 ± 3 which is almost comparable to the study done by Allen VM et al, Moodley et al, Asicioglu et al,

and Das S et al.^{3,6,7,13} Another study done by Mckelvey et al, found that women undergoing second stage caesarean section had gestational age > 41 weeks indicating as the gestational age and maturity increases, risk for caesarean section may also increase due to fetal head maturity thus interfering in physiological moulding process during labour leading to CPD.¹⁵

CONCLUSION

Second stage caesarean section was more common in young age group due to this reproductive age group being most fertile. Incidence was more common in primigravidae than multigravida due to uterine inertia, undiagnosed CPD and lack of experience of previous labour.

Two third women belonged to lower socioeconomic status. 47% of women had height of < 150 cm having high risk for going to second stage caesarean section. 70% had BMI between 25-29.9 kg/m². Thus, higher BMI is not only the operating risk but obstetrical risk as well.

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