

# Caesarean section for non progress of labour and perinatal outcome

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## Abstract

Among the primary CS, NPOL has a major impact on the escalating cesarean birth rates (CBR) but has not received destined attention. Further the risk of perinatal mortality (PM) and morbidity (PMB) is believed to increase when CS is performed as an emergency procedure after prolonged labour. **Settings:** Study was done at a rural referral medical college Shri Vasantao Naik Government Medical College Yavatmal, Maharashtra. **Study design:** A hospital based cross sectional study. The duration of study was 3 years from Jan 2012 to Dec 2015 were 755 participants NPOL mother for CS. **Methodology:** 20975 women delivered and out of them 5309 underwent CS and 755 CS were for NPOL. **Results:** In our study it was found that caesarean section rate increases with decrease in height i.e. 52.98% women who underwent cesarean section had height less than 140cm and CSR increase with increase in age i.e. 57.2% women were above 35 yrs age. Amongst of the 755 cases for NPOL, PMR was 26.49. Of the total 200 perinatal deaths, in cases of CS for NPOL 70 (35%) babies died due to birth asphyxia, 51 (25.5 %) due to septicaemia, 70(35%) had congenital malformations, 6 (3%) died of extreme prematurity and 3 (1.5%) had fresh still birth in case of NPOL.

**Keywords:** CS, Dystocia, NPOL, PMR.

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## INTRODUCTION

Many women have the rewarding experience of a natural birth, but a small proportion does suffer during labor, in spite of pregnancy being completely normal till the onset of labor. These women suffer due to prolongation of labor and consequences, so the diagnosis of Non progress of labor (NPOL) is one of the major indications for primary caesarean section (CS) Bhide<sup>1</sup> *et al* 1993 The overall C-section rate among first-time mothers was 30.8%. More than 1 in 3 (35%) of these Cesareans were due to a diagnosis of “failure to progress,” or slow progress in labor. This means that 10%, or 1 in 10, of all first-time

mothers in the U.S. had a Cesarean for failure to progress during the years 2002-2008 Boyle<sup>2</sup>, Reddy *et al.* 2013. Among the primary CS, NPOL has a major impact on the escalating cesarean birth rates (CBR) but has not received attention. Further the risk of perinatal mortality (PM) and morbidity (PMB) is believed to increase when CS is performed as an emergency procedure after prolonged labour. A study from India had revealed 2.1% to 4.3% CS for dystocia between 1980-1989, with a Perinatal Mortality Rate (PMR) of 38.7 compared to 20.5 PMR in CS for other indications Bhattacharya<sup>[3]</sup> *et al* 1991. Bhide<sup>1</sup> (1993) has reported PMR of 77 with CS for NPOL compared to 59.5 for other indications and yet another study reveals PMR of 71 in cases of CS for NPOL compared to 63 for other indications Desai<sup>[4]</sup> *et al* 1995. Present study was done to know the trends of fetal / neonatal mortality / morbidity associated with CS for NPOL in recent times in resource constrain settings and to understand some of the issues surrounding CS for NPOL and PMR in such cases.

**MATERIAL AND METHODS**

The present study was done at a rural referral medical college by doing analysis of the CS performed for NPOL over last 3 years from Jan 2012 –Dec 2015. During the 3 years period of analysis 20975 women delivered and out of them 5309 underwent CS and 755 CS were for NPOL.

**Study Design**

A hospital based cross –sectional study to study the trends of perinatal outcome in patients undergoing cesarean section for non-progress of labor

**Sample Size**

20975 women delivered and out of them 5309 underwent CS and 755 CS were for NPOL. Hence we here enroll all the mothers 755 those who had underwent cs for npol after applying inclusion and exclusion criteria.

**Selection Criteria**

**Inclusion Criteria**

All ANC patients admitted in labor ward for delivery

**Exclusion Criteria**

1. Cesaren section done for reason other than non-progress of labor.
2. Mothers not willing for consent.

**Data Collection And Data Analysis**

Appropriate approvals were taken from Dean of the S. V. N. Govt. Medical College, Yavatmal, Head of Dept. of OBGY, S. V. N. Govt. Medical College, Dept. of Paediatric, S. V. N. Govt. Medical College Yavatmal, and Institutional Ethical Committee (IEC) of the medical college. Data was entered in MS-Excel, corrected for typographic errors and analyzed using SPSS V.16 software. The results were rearranged in MS-Word. Graphical presentation of the result was done using MS-Excel. The variables are defined operationally and measured objectively by using the standardized scales of measurements.

**OBSERVATIONS AND RESULTS**

Out of the 755 CS for NPOL, 25 (3.31%) were amongst age less than 20yrs women, 23 (3.05%) between 20-24 years, 42(5.56%) between 25–29 years, 233 (30.86%) between 30-34 years and 432 (57.22%) above 35 years as shown in table no. 1, age similar to over all obstetric cases during the study period. 211(27.95%) women were from upper class, 188 (24.9%) middle, 279 (36.95%) from lower middle and 77 (10.2%) from lower class, Maximum no. of patients are from Lower Middle Class and much more than all other classes. A total of 100 (13.25%) women were illiterate, 52 (6.89%) had only primary education, 89 (11.79%) secondary, 130 (17.22%) had higher secondary education, 155 (20.53%) were graduates and 229 (30.33%) postgraduates as shown in table no. 1.

**Table 1:** Distribution of cases according to age, se class and Literacy

Variable	No. of Patients	Percentage	
Age	<20	25	3.31%
	20 to 24	23	3.05%
	25 to 29	42	5.56%
	30 to 34	233	30.86%
	>35	432	57.22%
<b>Total</b>	<b>755</b>	<b>100%</b>	
Socio-Economic Class	Upper	211	27.95%
	Middle	188	24.90%
	Lower Middle	279	36.95%
	Lower	77	10.20%
	<b>Total</b>	<b>755</b>	<b>100%</b>
Literacy	Illeterate	100	13.25%
	Primary	52	6.89%
	Secondary	89	11.79%
	Higher Secondary	130	17.22%
	Graguate	155	20.53%
	Post Graguate	229	30.33%
<b>Total</b>	<b>755</b>	<b>100%</b>	

Out of the 755 women, 577 mothers are short stature out of that 399 (52.85%) women had height of less than 140 cm, 178 (23.58%) between 141-150 cm and 178 (23.58%) had height more than 150 cm. 95 (12.58%) women were below 45 kg weight, 300 (39.74%) were between 45- 55 kg and 360 (47.68%) women were above 55 kg weight. 158 (20.93%) women were severely anaemic i.e. Hemoglobin (Hb) less than 7 gm%. 405 (53.64%) had Hb between 7-8.9 gm%, 102 (13.51%) 9-10.9 gm% and only 90(11.92%) mothers had Hb more than 11gm%. Number of anaemic cases especially severely and moderately anaemic women are more as compare to others in this study.

**Table 2:** Distribution of cases according to Height, Weight and Haemoglobin

Variable	No. of Patients	Percentage	
Height	<140	399	52.85%
	141 - 150	178	23.58%
	>150	178	23.58%
	<b>Total</b>	<b>755</b>	<b>100%</b>
Weight	<45	95	12.58%
	45 – 55	300	39.74%
	>55	360	47.68%
<b>Total</b>	<b>755</b>	<b>100%</b>	
Hb	<7	158	20.93%
	7 - 8.9	405	53.64%
	9 - 10.9	102	13.51%
	>11	90	11.92%
<b>Total</b>	<b>755</b>	<b>100%</b>	

Amongst of the 755 cases for NPOL, PMR was 200 (26.49%). Of the total 200 perinatal deaths, in cases of CS for NPOL 70 (35%) babies died due to birth asphyxia, 51 (25.5 %) due to septicaemia, 70(35%) had congenital malformations, 6 (3%) died of prematurity and 3 (1.5%)

had fresh still birth in case of NPOL. Out of these 200 babies lost, 72(36.%) had extremely low birth weight (1000-1499 gm), 66(33.0%) had very low birth weight (1500 – 1999 gm), 60(30%) had low birth weight (2000-2499 gm) and 2 (1%) were 2.5 kg or more also.

**Table 3: Distribution of Baby Died and Birth Weight**

	Variable	No. of Patients	%
Baby Died	Asphyxia	70	35%
	Septicaemia	51	25.5%
	Congenital anomaly	70	35%
	Prematurity	6	3%
	Still Birth	3	1.5%
	<b>Total</b>	<b>200</b>	<b>100%</b>
Birth Weight in Kg	1 -1.5	72	36%
	1.5 – 2	66	33%
	2 - 2.5	60	30%
	>2.5	2	1%
	<b>Total</b>	<b>200</b>	<b>100%</b>

In addition 555 (73.51%) of all babies 198 had some morbidity, 90 (16.22%) had exaggerated physiological jaundice, 56 (10.09%) had low apgar score, 52 (9.37%) were admitted to Neonatal Intensive Care Unit (NICU) for other reasons and remaining babies which are 357 in number are completely normal.

**Table 4: Foetal morbidity**

Foetal morbidity	No. of Patients	Percentage
Jaundice	90	16.22%
Low Apgar Score	56	10.09%
NICU	52	9.37%
No Morbidity	357	64.32%
<b>Total</b>	<b>555</b>	<b>100%</b>

## DISCUSSION

NPOL continues to contribute for many CS but the factors responsible (technical as well as nontechnical) have not been well documented. Many studies have revealed that the CSR increases with increasing age (Kambo *et al* 2002)<sup>5</sup>. In the present analysis, age of women who had CS for NPOL were almost similar to overall cases, however marginally more in women above 30 years. Some researchers support the view that CSR for dystocia are positively correlated with socioeconomic conditions (Wu *et al* 2000)<sup>6</sup>. In Wu *et al* out of 10754 women who 34.5% women of middle class, 33.7% lowest and 31.8 of highest socio-economic status had cesarean section. Taffel *et al* (1987)<sup>7</sup> in their study of CS in US between 1980 and 1985, have reported that of the 14.3% CS from NPOL, majority (46%) belonged to lower middle socioeconomic class and 37% middle and 27% upper class. Belizan *et al* (1999)<sup>8</sup> in their study from Latin America have also reported that 61% of the women from lower socioeconomic class had CS for dystocia compared to 39% CS for other indications. Muraleedharan (2000)<sup>9</sup>

in his study has also reported that of the 14.8% CS for NPOL, majority 54% were performed in women with lower socioeconomic class. In the present study there was an increasing trend of proportion of lower social class. It may have something to do with undernourishment and muscular strength and also due to lack of understanding of dynamics of labour. Lialios 1999<sup>[10]</sup> *et al* in their study showed that 33.99% women who had undergone cesarean section were above 35 yrs age which correlates with our study. Yudkin and Redman (1986)<sup>11</sup> have reported that in their study of the total CS with maternal height of below 155 cms 12.3%. CS between 156-160 cms 6.5% and between 161-165cms 4.9% underwent CS for dystocia. O'Svaldo *et al*<sup>12</sup> Sheiner *et al.*, (2000)<sup>13</sup> have also studied the CS rate for dystocia in relation to maternal height and found that it was 5.4% between 151-160 cm, 7.2% between 141-150 cm and 8.6% below 140 cm. However Lialios *et al* (1999)<sup>[10]</sup> have reported no difference with height. Present analysis reveals that out of all the CS for NPOL, 577 (76.50%) women had height of less than 150 cms. Lu *et al* (2001)<sup>[14]</sup> have reported that increase in weight women are at increased risk for several adverse pregnancy outcomes, including higher CSR. From the earliest 5-year period (1980-1984) to the most recent (1995-1999), the percentage of increase in weight-attributable cesarean deliveries more than tripled from 3.9 to 11.6 Crane *et al* (2001)<sup>15</sup> report that soft tissue dystocia may explain the higher CSR. The adjusted OR (ODD'S RATIO) was 1.66 (95% CI 1.51, 1.82) for obese women in the entire sample to undergo cesarean delivery. In addition, increasing BMI was associated with increased risk for cesarean delivery. The present analysis also reveals that higher maternal weight was independently associated with higher rate of CS for NPOL. In the study by Yudkin and Redman (1986)<sup>11</sup>, it was revealed that there was 40% increase in CS for NPOL in women with mild to moderate anaemia compared to non-anemic women. Similarly present study also reveals that percentage of anemic women mild to moderate was much more in CS for NPOL 67.15% than over all cases of anemia where as 20.93 are severe anemic alone. Steyn *et al* (1998)<sup>[16]</sup> have reported a decline in PMR from 34.7 in 1975 to 18.4 in 1994 among CS, with dystocia being one of the main indications. Mukherjee *et al* (1993)<sup>17</sup> have reported 53.4% neonatal deaths in cases of CS for NPOL CSR/NPOL 9.7 in 1976-78 to 17.5% in 1990-91. The present study of analysis of cases over a period of 3 years reveals no difference in PMR in CS for NPOL over the years, also that height, weight, and hemoglobin status also play a role in CS for NPOL in addition to technical of diagnosis of labour. More research is needed in this direction so that timely decisions are taken and also CS for NPOL are reduced.

## CONCLUSION

One of the major indications for Cesarean section (CS) is failure of labor to progress. Over the years there is not much change in perinatal mortality in spite of improved techniques and neonatal resuscitation, improved neonatal care and use of antibiotics. Attempts must continue to prevent CS for NPOL after a long wait knowing at least at the onset or within 6-8 hours of labour as to who will deliver or not. Major risk factors for non-progress of labor were obesity, advanced maternal age, height, weight. Indications for labor induction should be carefully evaluated in order to decrease the rate of operative deliveries. Properly timed cesarean section can improve the outcome in mother and fetus. So, intellectual judgement should be exercised for safe mode of termination of pregnancy. Hence, it mandates a multidisciplinary approach so as to reduce perinatal mortality and morbidity.

## REFERENCE

1. Bhide A. Changing trends of caesarean section. J. Obstet, Gynecol. India, 47: 539-542, 1993
2. Boyle A, Reddy UM, Landy HJ, Huang CC, Driggers RW, Laughon SK: Primary cesarean section in United States J. Obstet Gynecol. 2013 Jul; 122(1):33-40.
3. Bhattacharyya P., Purkayasha S., Ray U., Mondal R Perinatal mortality Cesarean section J. Obstet Gynaecol 11: 192 – 196, 1991
4. Desai P, Manjunath AP, Desai M. Increasing CS rate: Does it really improve perinatal outcome? J. Obstet. Gynecol. India 45: 361-364, 1995
5. Kambo I, Bedi N, Dhillon BS, Saxena NC. A critical appraisal of caesarean section rates at teaching hospitals in India. Int J Gynaecol Obstet 2002;79(2): 151-8.
6. Wu WJ. Cesarean delivery in Shantou, China: a retrospective analysis of 1992 women. Birth 27:86-90; 2000.
7. Taffel SM, Placek PJ, Lise T. Trends in United States CS rate for 1980-1985. Am. J. Public. Health. 77; 955-950; 1987.
8. Belizan JM, Althabe Fernando A, Barros FC, Alexander S. Rates and implications of caesarean sections in Latin America Ecological Study. BMJ. 319 (7222): 1397 – 1402, 1999
9. Murreleedharan VR. Caesarean Sections on the rise. The natl. Med. J. India. 13 (1): 46-47; 2000.
10. Lialios G, Kaponis A, Adonakis G. Maternal age as an independent risk factor for caesarean delivery. Int. J. Gynecol Obstet. 67 (1): 187-188; 1999
11. Yudkin and Redman, Caesarean section dissected, 1978-83, BJOG, 93 (2): 135-14, 1986.
12. O' Svaldo H, Parada MD, Winogaurd RH, Tournassini TL. Caesarean Birth Epidemics. Am. J. Obstet. Gynaecol 177 (1): 1-6; 1997.
13. Sheiner E, Sheiner EK, Shoham-Vardi I, Gurman GM, Press F, Mazor M *et al.* Predictors of recommendation and acceptance of intrapartum epidural analgesia. Anesth Analg 90: 109-13; 2000.
14. Lu GC, Rouse DJ, DuBard M, Cliver S, Kimberlin D, Hauth JC. The effect of the increasing prevalence of maternal obesity on perinatal morbidity. Am. J Obstet Gynecol, 185; 845- 9; 2001.
15. Crane SS, Wojtowycz MA, Dye TD, Aubry RH, Artal R. Association between pre- pregnancy obesity and the risk of caesarean delivery. Obstet Gynecol 89; 213- 6 ; 1997
16. Steyn *et al.* Trends in caesarean sections at Tygerberg Hospital, South Africa: A 20 year experience. The Central African journal of medicine 44(9):219-23 october 1998
17. Mukherjee J, bhattacharyya PK, Lahiri TK, Sammaddar JC, Mehta R. Perinatal mortality in caesarean section: a disturbing picture of unfulfilled expectations. J Indian Med Assoc. 1993;91(8):202-3.

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