

## STUDY OF PERINATAL MORTALITY AND MORBIDITY IN CAESAREAN SECTION AND VAGINAL DELIVERY

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### SUMMARY

In present study carried out at Government Medical College and Hospital, Nagpur, on 450 patients each of caesarean section and vaginal deliveries, the incidence of perinatal mortality and morbidity, and correlation of perinatal morbidity and mortality with various factors is studied. Perinatal mortality in caesarean section is 82.2/1000 livebirths and 91.1/1000 livebirths in vaginal deliveries. In caesarean section group perinatal loss in emergency situation is 86.2/1000 livebirths in comparison to 45.4/1000 livebirths in elective caesarean section. Thus perinatal loss is maximum in vaginal deliveries and least in elective caesarean section. Though the perinatal morbidity is comparable in vaginal deliveries and caesarean section, it is almost 3 times in emergency situation as compared to elective caesarean section. Authors conclude that both perinatal mortality and morbidity can be controlled by a good referral system and better obstetric and paediatric care.

### INTRODUCTION

It has been rightly said previously that "Caesarean section solves problem for the obstetrician and creates problem for the paediatrician". But the timely application

of caesarean section has always helped in reducing perinatal loss in comparison to complicated vaginal delivery.

In the present study, carried out at Government Medical College and Hospital, Nagpur, the author has reached to the conclusion that perinatal mortality was highest in vaginal deliveries i.e. 91.1/1000

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*Accepted for Publication in Sept' 96*

live births, was 86.2/1000 live births in emergency caesarean section and lowest in elective caesarean section i.e. 45.4/1000 live births. In the present study various risk factors of perinatal morbidity in both emergency and elective caesarean section were also studied and it was concluded that not only the incidence of perinatal mortality but the incidence of perinatal morbidity can also be reduced by a better understanding of the paediatric and obstetric factors.

#### MATERIAL AND METHODS

The present study was carried out at Government Medical College and Hospital, Nagpur. The patients were divided into two groups. The study group included infants born by caesarean section regardless of condition for birth weight and with no correction for weight or gestational age. The control group included an equal number of infants born by normal vaginal deliveries.

In each case age of the mother, parity, social status and whether emergency or booked was noted. Details of present history like period of amenorrhoea, duration of labour pains, duration of leaking and history of bleeding or discharge per vaginum was taken.

A detailed obstetric examination was carried out to find the presentation, position and evidence of any obstetric abnormality and a detailed intranatal record was kept. In case of caesarean sections, the type of sections, the indication for caesarean section and any intraoperative or post operative complication were noted.

In each case outcome of labour whether liveborn or stillborn was noted. The timing and the cause of death were recorded. Routine examination of the fetus, placenta and cord was done in all deliveries. The weight of baby and apgar score at '1 minute' and '5 minutes' were noted. Birth injuries, congenital anomalies, signs of asphyxia, icterus, any signs of postmaturity and prematurity and signs of maceration in case of stillborn babies was noted.

#### OBSERVATION

Table I Total perinatal deaths occurring in caesarean section were 37 (8.22%) of which 22 (4.89%) were stillbirths and 15 (3.33%) were neonatal deaths. Amongst vaginal deliveries the perinatal mortality was 41 (9.11%) which included 33 (7.33%) stillbirths and 8 (1.78%) neonatal deaths. Thus perinatal mortality in vaginal deliveries was only slightly higher as compared

**Table I**  
**PERINATAL MORTALITY AND MORBIDITY IN CAESAREAN SECTION AND VAGINAL DELIVERIES**

Type of delivery	Perinatal Mortality	Perinatal Morbidity
Caesarean	37 (8.33%)	60 (13.33%)
Vaginal	41 (9.11%)	57 (12.67%)



to caesarean section i.e. 91.1 Vs 82.2/1000 as compared to 57 (12.67%) in vaginal live birth.

The perinatal morbidity in caesarean section was seen in 60 (13.33%) of cases

Table II Stillbirth was the most common cause of perinatal mortality in vaginal deliveries.

**Table II**  
**CAUSES OF PERINATAL MORTALITY IN CAESAREAN SECTIONS AND VAGINAL DELIVERIES**

Causes	Caesarean Section	Vaginal deliveries
1. Stillbirths	22 (56.46%)	33 (88.48%)
2. Asphyxia	6 (16.21%)	2 (4.87%)
3. Sepsis	5 (13.51%)	-
4. Prematurity	3 (8.1%)	5 (12.19%)
5. Others (Rh Incompatibility)	1 (2.7%)	-
6. RDS	-	-
7. Congenital anomalies	-	1 (2.43%)

**Table III**  
**CAUSES OF PERINATAL MORBIDITY IN CAESAREAN SECTION AND VAGINAL DELIVERIES**

Causes	Morbidity in Caesarean Section	Morbidity in Vaginal deliveries
Asphyxia	46 (10.13%)	44 (9.78%)
Prematurity	13 (2.86%)	33 (7.33%)
Congenital anomalies	5 (1.11%)	6 (1.33%)
Conjunctivitis	3 (0.66%)	-
Fever	3 (0.66%)	2 (0.44%)
Umbilical sepsis	2 (0.44%)	-
Others	2 (0.44%)	-
	74 (16.44%)	85 (18.89%)

deliveries (80.48%) in comparison to caesarean section (59.46%). Asphyxia was present in 16.21% of caesarean section and 4.87% of vaginal deliveries respectively. Prematurity was noted in 12.19% of vaginal deliveries and 8.1% of caesarean section. The low incidence of prematurity and stillbirths in caesarean section is mainly due to the fact that caesarean section is mainly avoided in these situations.

Table III In both types of deliveries asphyxia is the leading cause of perinatal morbidity. Other causes in decreasing order of frequency are prematurity, congenital anomalies, fever, conjunctivitis and umbilical sepsis.

Table IV Incidence of perinatal mortality was 7.62% and that of perinatal morbidity was 13.09% in 21-30 year of age group, the incidence of perinatal mortality and morbidity in 31 or above age group was 41.67% respectively. Thus the perinatal mortality and morbidity was much higher in mothers of higher age group.

Table V In caesarean section foetal morbidity was more in primipara (15.86%) as compared to multipara (11.15%). But the foetal mortality in caesarean section was almost twice in multipara (10.33%) as compared to primipara (5.77%).

Table VI Birth weight plays a significant role in the survival of neonates. Babies

**Table IV**  
**AGEWISE DISTRIBUTION OF PERINATAL MORTALITY**  
**AND MORBIDITY IN CAESAREAN SECTION**

Age in years	No. of caesarean Section	Perinatal Morbidity	Perinatal Mortality
10 - 20 yrs.	18 (4%)	-	-
21 - 30 yrs.	420 (93.33%)	55 (13.09%)	32 (7.62%)
Above 31 yrs.	12 (2.67%)	5 (41.67%)	5 (41.67%)

**Table V**  
**PARITY WISE DISTRIBUTION OF PERINATAL MORTALITY**  
**AND MORBIDITY IN CAESAREAN SECTION**

Parity	No. of Caesarean section	Mortality	Morbidity
Primipara	208 (46.22%)	12 (5.77%)	33 (15.86%)
Multipara	242 (53.78%)	25 (10.33%)	27 (11.15%)



**Table VI**  
**PERINATAL MORTALITY IN RELATION TO BIRTH**  
**WEIGHT IN CAESAREAN SECTION**

Birth weight in kg.	No. of caesarean section	Still-births	Neonatal deaths	Total
Less than 1	-	-	-	-
1-1.5	10 (2.22%)	4 (40%)	2 (20%)	6 (60%)
1.6-2	43 (9.55%)	5 (11.62%)	3 (6.97%)	8 (18.6%)
2.1-2.5	161 (35.78%)	11 (6.83%)	5 (3.1%)	16 (9.93%)
2.6-3	158 (35.11%)	1 (0.63%)	5 (3.16%)	6 (3.79%)
3.1-3.5	62 (13.78%)	1 (1.61%)	-	1 (1.61%)
3.6-4	16 (3.55%)	-	-	-
Above 4	-	-	-	-

weighing more than 2000 gm., but less than 4000 gm. had lower perinatal mortality than babies weighing less than 2000 gm.

#### DISCUSSION

High perinatal mortality and morbidity levels are no longer acceptable natural hazards of childbirth. In the present study perinatal mortality in caesarean section was slightly higher as compared to that in vaginal deliveries i.e. 9.11% Vs 8.22%. The same parameters reported by Bedi et al 1992 were 9.9% and 9.3% respectively while Basak et al 1981 observed that perinatal mortality in caesarean section was 4 times that of vaginal deliveries.

Bhattacharya et al 1992 reported that stillbirth was the cause of perinatal loss in 14.48% of cases and prematurity was the leading cause in 58.5% of cases. In the present study the leading cause of perinatal

loss was prematurity accounting for 59.46% of cases.

Percentage of perinatal morbidity was almost same in caesarean section and vaginal deliveries in present study and study conducted by Bedi et al 1992. But Basak et al 1981 showed perinatal morbidity to be almost 4 times in caesarean section as compared to vaginal deliveries. In both the studies asphyxia was the leading cause of perinatal morbidity in caesarean section accounting for 10.13% and 7.9% respectively.

In present study and both previous study done by Bhattacharya et al 1992 and Basak et al 1981 it was seen that perinatal mortality and morbidity increases considerably when caesarean section is done in mother of higher age group i.e. above 31 years. In the present study incidence of both above parameters for age group 21-30 years are 7.62% and

13.09% and for age group above 31 years the incidence is 41.62%.

Bhattacharya et al 1992 showed that perinatal mortality was more in patients with para 0 and para 5 and above. Bedi et al 1992 gave the same result. The present study showed that perinatal mortality was almost twice in multipara as compared to primipara but perinatal morbidity was more in primipara (15.86%) as compared to multipara (11.15%).

As the birth weight increases both perinatal mortality and morbidity decreases and the same clinical trend has been observed by Basak et al 1981, Bhattacharya et al 1992 and also in the present study.

### CONCLUSION

The present study showed that stillbirth accounts for almost 60% of perinatal mortality in caesarean section. The main causes of stillbirth were antepartum haemorrhage and obstructed labour. Hence, it is necessary to have a good referral system where such

high risk patients can be promptly referred to tertiary centres.

Apart from this foetal distress also accounted for increased perinatal mortality and morbidity. These results make it clear that labour, delivery and transitional nurseries must have intensive care areas with critical care monitoring.

It was also found that death from asphyxia in labour or at birth are potentially preventable by improved foetal monitoring, availability of emergency caesarean section and skilled resuscitation at birth. Similarly increased perinatal mortality and morbidity due to sepsis can be decreased by careful hygiene and aseptic measures during delivery.

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