

## Original Article

# A study of perinatal deaths at a tertiary care teaching hospital

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### Abstract

**Objectives :** To determine the causes of perinatal mortality and to find out and adopt measures to reduce perinatal mortality. **Methods :** A retrospective study was carried out to analyze the perinatal deaths that occurred over a 3 year period from January 2002 to December 2004. **Results :** There were 8474 deliveries and 1208 perinatal deaths during the 3 year period giving a perinatal mortality rate of 142.55 per 1000 births. The still birth rate was 110.69 per 1000 births and neonatal mortality rate was 37.15 per 1000 live births. Low birth weight babies had significantly higher perinatal mortality rate. Antepartum hemorrhage, severe preeclampsia, severe anemia were the most frequent causes of perinatal deaths. **Conclusion :** Reduction in perinatal mortality could be facilitated by increasing awareness for registration of pregnant women for antenatal care.

**Key words:** perinatal mortality, stillbirths, neonatal mortality

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### Introduction

Perinatal mortality is taken as index of the efficacy of not only antenatal and intranatal care but also of the socioeconomic condition of the community. The advent of effective antibiotics, the establishment of organized blood transfusion services, improvement in anesthesia and operative obstetrics and the introduction of routine antenatal care has led to a decreasing perinatal mortality. Though this decrease is evident even in India, it is still very high as compared to that of the technologically advanced countries. It is higher in rural areas than in urban areas.

According to World Health Report 2001 perinatal

conditions account for more than 4% (2.4 million)<sup>1</sup> of the deaths in the world, most of them in developing countries.

This study was undertaken to determine the causes of perinatal mortality and to find out measures to reduce perinatal mortality.

### Methods

In this retrospective study perinatal deaths occurring over a 3 year period from January 2002 to December 2004 in our tertiary care teaching hospital were analyzed. All perinatal deaths i.e. still births and early neonatal deaths were studied. Pregnant women having at least three antenatal visits in our hospital were considered booked cases and so also were those who had one or two antenatal visits at our hospital besides proper antenatal care outside. Pregnant women who came for the first time to the hospital, without any antenatal care and who were not investigated anywhere were taken as unbooked cases.

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## Results

Table 1 shows that during the study period there were 8474 deliveries and 1208 perinatal deaths out of which 938 were still births. Two hundred seventy (270) babies died during the first 7 days of life. Overall perinatal mortality rate (PNMR) was 142.55/1000 births. There were 4399 booked cases with 113 still births and 87 neonatal deaths giving a PNMR of 45.46/1000 births. There were 4075 unbooked cases with 825 stillbirths and 183 neonatal deaths giving a PNMR of 247.36/1000 births. In our hospital overall neonatal mortality rate was 37.15/1000 live births; but in booked cases it was 20.71/1000 live births.

Table 2 shows that PNMR was the highest in neonates weighing 500-997g viz., 800 per 1000 births and 61.07/1000 births as the birth weight increased PNMR decreased.

Table 3 shows that in preterm deliveries the PNMR was 159.24 per 1000 births while in term deliveries it was significantly lower at 138.55/1000 births (P=0.031).

Table 4 shows the various obstetrics factors associated with perinatal deaths. Antepartum hemorrhage prematurity, severe anemia, severe preeclampsia, eclampsia and obstructed labor accounted for 19.3% 13.24%, 10.92% 8.36%, 6.53% and 6.62% of the perinatal mortality respectively.

**Table 1. Incidence of Perinatal mortality.**

	Booked	Unbooked	Total
Number of deliveries	4399	4075	8474
Live Births	4199	3067	7266
Perinatal deaths	200	1008	1208
Perinatal mortality rate per 1000 births	45.46	247.36	142.55
Still births	113	825	938
Still birth rate per 1000 births	25.68	202.45	110.69
Neonatal deaths	87	183	270
Neonatal mortality rate per 1000 live births	20.71	59.66	37.15

**Table 2. Birth weight and perinatal mortality.**

Birth weight (g)	Total births	Perinatal deaths	Perinatal mortality rate per 1000 births
500-999	500	400	800.00
1000-1499	827	229	276.90
1500-2499	2202	277	125.79
2500 & Above	4945	302	61.07

**Table 3. Gestational age and perinatal mortality.**

Group	Gestational age	Total births	Perinatal deaths	Perinatal mortality rate per 1000 births	P value
I	28-36 weeks 6 days	1639	261	159.24	$\chi^2 = 4.63$ df = 1 P=0.031
II	$\geq 37$ weeks	6835	947	138.55	

Table IV.

Causes (1)	Deaths (2)	Percentage (3)	Booked Cases		Unbooked Cases		P value between 5 & 7
			Death (4)	Percentage (5)	Death (6)	Percentage (7)	
Antepartum hemorrhage	230	19.03	40	17.39	190	82.60	0.70
Eclampsia	79	6.53	9	11.39	70	88.60	0.20
Severe PET	101	8.36	21	20.79	80	79.20	0.23
Severe IUGR	47	3.89	10	21.27	37	78.72	0.35
Severe Anemia	132	10.92	25	18.93	107	81.06	0.435
Obstructed labor	80	6.62	8	10	72	90.00	0.001
Rupture uterus	50	4.13	4	8	46	92	0.096
Cord prolapse	20	1.65	4	20	16	80	0.676
Prematurity	160	13.24	40	25	120	75	0.002
Congenital malformation	40	3.31	10	25	30	75	0.144
Undetermined	269	22.26	29	10.78	240	89.21	0.004
	1208		200		1008		

## Discussion

The PNMR in our study is 142.55 per 1000 births. In booked cases it is much less (45.46 per 1000 births) than in unbooked cases (247.36 per 1000 births). Our hospital is a referral center where a number of patients are referred from primary health centers (PHC), Community health centers (CHCs) and near by hospitals. Most of the PNMR as reported by various authors is as follows: Shinde (2001)<sup>2</sup> - 83.99 per 1000 births, Pillai et al (1993)<sup>3</sup> - 49.37 per 1000 births, Aras et al (1990)<sup>4</sup> - 46.32 per 1000 births, Bhavsar and Shrotri (1989)<sup>5</sup> - 99 per 1000 births, Lopez and Deshmukh (1986)<sup>6</sup> - 43.24 per 1000 births.

Still birth rate in our study is 110.69 per 1000 births while in booked cases it is 25.68 per 1000 births. Still birth rate reported by various authors is as follows: Shinde<sup>2</sup> - 56.82 per 1000 births, Bhavsar and Shrotri<sup>5</sup> - 56.32 per 1000 births, Lopez and Deshmukh<sup>6</sup> - 27.05 per 1000 births and Nayak and Dalal<sup>7</sup> - 23.40 per 1000 births (Table 5).

Overall neonatal mortality rate in our study is 37.15 per 1000 live births although in booked cases it is only 29.97 per 1000 live births. Neonatal mortality rate

reported by various authors is as follows - Shinde<sup>2</sup> - 28.00 per 1000 births, Bhavsar and Shrotri<sup>5</sup> - 44.67 per 1000 births and Lopez and Deshmukh<sup>6</sup> - 16.64 per thousand (Table 5). As reported by various authors. antenatal care during pregnancy has significant influence on perinatal outcome<sup>2,5,6</sup>. More perinatal deaths occurred in patients not receiving antenatal care. These findings are consistent with those of Bhavsar and Shrotri<sup>5</sup> and Lopez and Deshmukh<sup>6</sup>.

Maximum perinatal deaths occurred in low birth weight babies. Similar findings are reported by Shinde<sup>2</sup>, Pillai et al<sup>3</sup>, Aras et al<sup>4</sup> and Lopez and Deshmukh<sup>6</sup>. Among babies weighing less than 1 kg there were 80% perinatal deaths. Similar was the experience of Shinde<sup>2</sup>, Bhavsar and Shrotri<sup>5</sup>.

Antepartum hemorrhage specially placenta previa, eclampsia, and severe preeclampsia are important causes of perinatal mortality, Shinde<sup>2</sup>, Bhavsar and Shrotri<sup>5</sup>, Lopez and Deshmukh<sup>6</sup> have reported similar causes of perinatal deaths.

Reduction in perinatal deaths could be facilitated by increasing awareness for registration of pregnant women for antenatal care. Early registration during

pregnancy can certainly help to prevent future consequences of low birth weight babies, still births, and neonatal deaths.

### **Conclusion**

Universal antenatal care is an important means of reducing perinatal mortality and achieving our target of PNMR of 35 per 1000 births envisioned in RCH policy of India.

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