

Factors Associated with Perinatal Mortality: A Descriptive Observational Study

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Abstract

Objective: The objective of this study was to find out various causes of perinatal mortality and the factors associated with perinatal death.

Methods: A descriptive observational study done in a teaching hospital (Referral hospital at district) attached to Jawaharlal Nehru Medical College, Belgaum. All perinatal deaths during the period between December 2007 to May 2009 were included in the study.

Results: There were 3904 deliveries and 193 perinatal deaths during the study period. Perinatal mortality rate (PNMR) was 49.4/1000 births. The stillbirth rate was 43/1000 births. Antepartum hemorrhage and severe pre-eclampsia were the common causes of perinatal deaths.

Conclusion: Antepartum hemorrhage and pregnancy induced hypertension are leading causes of perinatal deaths. Majority of these complications occur in the later part of pregnancy increased vigilance during antenatal care can reduce these deaths.

Keywords: Perinatal deaths, causes, factors, antenatal care, perinatal morbidity, mortality.

INTRODUCTION

Perinatal mortality is taken as an index of the efficacy of not only antenatal and intranatal care, but also of the socioeconomic condition of the community.¹ Perinatal mortality rate in developing countries is three to five folds higher than that in developed countries.² The current perinatal mortality rate (PNMR) in India is 49 per 1000 births as per the NFHS. The advent of effective antibiotics, establishment of organized blood transfusion services, introduction of routine antenatal care and neonatal facilities has led to a decreasing perinatal mortality. Though this decrease is evident even in India, perinatal mortality is still high as compared to developed countries.² According to World Health Report (2001), perinatal mortality accounts for more than four percent of deaths in the world, most of them occurring in developing countries. This hospital based study was undertaken to know the causes of perinatal mortality and thus help in its prevention.

METHODS

A prospective hospital based descriptive observational study. All perinatal deaths over a period of 18 months (from December 2007 to May 2009) in a teaching hospital were included. Stillbirth defined as fetal death more than or equal to 28 weeks gestation

and early neonatal death (END) defined as death occurring in the first seven days of birth. Maternal details like age, parity, registered (minimum three visits) or unregistered were noted. Mode of delivery, gestational age and birth weight of fetuses were recorded. Autopsy was performed in those, whose parents provided informed consent. The data obtained was tabulated and analyzed using rates, ratios and percentages.

RESULTS

During the study period there were 3904 total number of deliveries with 193 perinatal deaths (168 stillbirths and 25 early neonatal deaths). The perinatal mortality rate (PNMR) was 49.4 per 1000 births and the stillbirth rate was 43 per 1000 births (Table 1). The autopsy rate was 58.5% (n = 113).

Out of 193 perinatal deaths 153 (79.2%) were unregistered. Most of the women were in the age group 20 to 30 years (82%). Nearly fifty percent (48.7%) of the women were illiterate and 57% belonged to lower socioeconomic class (Income less than Rs. 2500.00). Most of the babies were delivered by vaginal route (66.8%; n = 129) (Table 2).

According to gestational age, most of the perinatal deaths were preterm and only 18.6% were term (Table 3).

Perinatal mortality was highest in low birth weight babies (<2,500 gm) (Table 4).

Table 1: Perinatal mortality rate and stillbirth

Details	Number
Total deliveries	3904
Total perinatal deaths	193
PNMR	49.4 per 1000 births
Total stillbirths	168
• Macerated stillbirths	71
• Fresh stillbirths	97
Stillbirth rate	43 per 1000 births
Total early neonatal deaths (END)	25

Table 2: Characteristics of women (n = 193)

Details (n=193)	Number	Percentage
Unregistered	153	79.2%
Registered cases	40	20.8%
Maternal age		
• Less than 20 years	20	10.3%
• 20 to 30 years	158	81.8%
• More than 30 years	15	7.7%
Gravidity		
• Primigravida	93	48.1%
• Multigravida	100	51.9%
Illiterate	94	48.7%
Low socioeconomic status (< Rs. 2500/-)	110	57.0%
Vaginal delivery	129	66.8%

Table 3: Gestational age

Gestational age (n=193)	Number	Percentage
28 to 32 weeks	89	46.1%
32 to 37 weeks	67	34.7%
37 to 42 weeks	36	18.6%
More than 42 weeks	00	00.0%

Table 4: Birth weight and perinatal mortality

Birth weight (n=193)	Number	Percentage
< 1000 gm	35	18.1%
1000 to 1499 gm	56	29.0%
1500 to 2499 gm	68	35.2%
≥ 2500 gm	34	17.6%

Most of the perinatal deaths were due to antepartum hemorrhage, severe PIH, eclampsia, preterm, birth asphyxia and congenital malformation. However, cause was undetermined in 34 cases (20.2%) (Table 5).

DISCUSSION

Perinatal death is a traumatic experience for both mother and the obstetrician. Despite advances in fetomaternal medicine, perinatal death rate continues to be high.

Table 5: Causes of perinatal deaths

Causes	Number	Percentage
Stillbirth (n=168)		
Abruption	52	30.9%
Unknown	34	20.2%
Severe pre-eclampsia	23	13.6%
Congenital anomalies	10	5.9%
Placenta previa	08	4.7%
Birth asphyxia	08	4.7%
Preterm labor	06	3.5%
Maternal infections	05	2.9%
Severe IUGR	05	2.9%
Uterine rupture	04	2.3%
Eclampsia	03	1.7%
Gestational diabetes	03	1.7%
Cord prolapse	03	1.7%
Immune hydrops	01	0.6%
Early neonatal deaths (n = 25)		
Hyaline membrane disease	06	24.0%
Meconium aspiration	06	24.0%
Extreme prematurity	05	20.0%
Sepsis	03	12.0%
Congenital malformation	03	12.0%
Pulmonary hemorrhage	02	8.0%

The PNMR in the present study was high 49.4 per 1000 births which was comparable to other studies.¹⁻³ The stillbirth rate was 43 per 1000 births in comparison with other studies,^{2,4,5} since this hospital teaching institute majority of these deaths occur in those who present late.

As observed in many of the studies nearly 80% (79.2%) of these perinatal deaths occurred among unregistered group in this study.^{1,2,6,7} This is one of the areas in developing country like India needs efforts to implement effective antenatal care. The associated factors like socioeconomic status and female literacy had influence the adverse pregnancy outcome. Women’s education was inversely associated with perinatal deaths as observed in this study (48.7% women were illiterate and 57% belonged to lower socioeconomic class).² In the present study, Similar findings were noted in other studies.^{2,6,9} Education automatically increases awareness and helps in overall improvement. Perinatal deaths were more in multigravidae compared to primigravidae as noted in other studies.^{2,8,10} Close monitoring is very essential even in multigravidae as obstetric complications increase with increase in parity.

Low birth weight (LBW) is an important cause of deaths in this study as observed in many of the studies.^{1,3,4,5} The factors responsible for these can be identified during the antenatal period as most of these can present with conditions that may be associated LBW.

Abruption placenta and severe pre-eclampsia were the important cause of perinatal mortality. Similar findings were noted in other studies.¹⁻⁴ Though there are no strategies at present to prevent these conditions but severity of its effect and mortality can reduced by effective antenatal care, intra-natal care and good neonatal care.

Effective antenatal care with early registration and increased visits in later part of pregnancy along with proper intranatal and neonatal care can reduce the perinatal deaths. Early registration helps in proper evaluation and identification women at risk. Improving the womens' education not only improves effective ANC but also improves awareness specially during emergencies.

CONCLUSION

Effective antenatal care is still lacking among the pregnant women. Improvement in education and socioeconomic status are the key components of good pregnancy outcome are still lacking. Skilled health care provider (in antenatal, intranatal and neonatal care) with proper referral system and increased awareness in women are essential to reduce perinatal deaths.

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