PERINATAL MORTALITY-A HOSPITAL BASED STUDY

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ABSTRACT

A total of 5082 consecutive deliveries in Medical College Hospital, Kottayam during the period August 1992 to July 1993 constituted the study. Perinatal mortality rate (PMR) was 38.5 per 1000 total births and autopsy rate was 72%. More than 85% of perinatal deaths occured in low birth weight and preterm babies. Perinatal hypoxia and congenital anomalies were the leading causes in late fetal deaths (LFD). The main causes of early neonatal deaths (END) were perinatal hypoxia, infections, congenital anomalies and hyaline membrane disease (HMD).

Key words: *Perinatal mortality, Late fetal deaths, Early neonatal deaths.*

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PMR is the most sensitive index of health status of women and quality of maternal and child health services. It is directly related to various high risk maternal factors and diseases on one hand and birth weight-gestational age characteristics of the newborn population on the other(l). The alarmingly high rate-of perinatal mortality in India makes it a major health problem, necessitating a precise definition of the factors which contribute to its high incidence. The present study was conducted to identify the primary causes of perinatal mortality and their relationship with birth weight, gestational age and maternal antenatal care. The PMR, late fetal death rate (LFDR) and early neonatal death rate (ENDR) were calculated and the various factors which can be prevented were analyzed.

Material and Methods

AH the consecutive deliveries in our institution during the period August 1992 to July 1993 were the study subjects. LFD and END during the period of 28 weeks of gestation to 7 completed days of life were included in the study. Babies weighing less than 1000 g and below 28 weeks of gestation were excluded. The cause of death was ascertained by a detailed maternal history and clinical examination in both still borns and neonates. Autopsy was performed whenever parents consent was available. The perinatal deaths were analyzed according to Wigglesworth classification(2). Data were analyzed with special reference to mortality related to birth weight and gestation. Gestational age was calculated in LFD from the date of last menstrual period and in END by the Dubowitz scoring. PMR was

calculated by LFD plus END of babies weighing more than 1000 g (or 28 weeks of gestation or more) at birth per 1000 total births. FNDR comprised the number of deaths during the first 7 days of life per 1000 total births.

Results

Of 5082 consecutive deliveries there were 195 perinatal deaths, PMR being 38.5 per 1000 births. Of 195 perinatal deaths, there were 102 LFD and 93 END, LFDR and ENDR being 20.1 and 18.3 respectively. Perinatal deaths were common in males [56 (54.9%) LFD and 52 (55.9%) END were males]. LFD and END were common in primi, *i.e.,* 54 (52.8%) and 59 (63.4%), respectively.

Perinatal mortality varied inversely with birth weight and gestational age *(Tables I &* ID. Eighty eight (86%) LFD and 75 .(80%) END were low birth weight babies. Ninety two (90%) LFD and 72 (78%) END were preterm babies.

Of 102 LFD, deaths due to perinatal hypoxia were 42 (41.2%) and due to congenital anomalies-were 12 (11.7%). Forty seven per cent of LFD were macerated babies. Important causes of END were perinatal hypoxia (43%), infections (16%)', congenital anomalies (15%) and HMD (15%) *(Table III).* Autopsy was done for 80 LFD and 60 END, autopsy rate being 72%.

Discussion

PMR in the present study is 38.5 with LFDR of 20.1 and ENDR of 18.3. The relatively high PMR in the present study is accounted by the fact that most mothers had one or more high risk factors. It is evident that adequate antenatal care is one of the major requisites in the .reduction of perinatal mortality. Hospital based data on perinatal mortality are not truly representative of the community at large because the data often pertain to selective population of high risk mothers(l). The PMR in various teaching hospitals were: Vellore-40.7(3), Madras-89.5(4), Pondicherry-57(5), and Delhi-41(1).

Perinatal hypoxia was the commonest cause of perinatal mortality in all

TABLE I—*Perinatal Deaths In Relation To Birth Weight*

Birth Weight (g)	Total	LFD		END	
		No.	%	No.	%
< 1000	4	4	100	—	—
1000-1499	100	39	30	33	33
1500-1999	225	26	11.5	19	8.5
2000-2499	860	23	2.3	23	2.3
2500-2999	2421	13	0.5	14	0.5
3000-3499	1275	Nil	—	3	0.0002
≥ 3500	196	1	0.05	1	0.05

TABLE II—*Perinatal Deaths In Relation To Gestational Age*

Gestational Age (weeks)	Total	LFD		END	
		No.	%	No.	%
< 28	4	4	100	—	—
28-31	49	25	41.02	17	34.7
32-36	356	67	18.8	55	15.4
37-41	4661	10	0.002	21	0.0004
≥ 42	22	0	—	0	—

TABLE III—*Causes of Perinatal Deaths*

Causes	No.	%
LFD		
Total	102	
Perinatal hypoxia	42	41.2
Congenital anomalies	12	11.7
Macerated	48	47.1
END		
Total	93	
Perinatal hypoxia	40	43
Infections	15	16
Congenital anomalies	14	15
HMD	14	15
Intraventricular hemorrhage / Pulmonary hemorrhage	5	5.6
No cause	5	5.4

studies. In our- study, 40% of LFD and 43% END were due to perinatal hypoxia. Ninety per cent of these patients had high risk factors in the antenatal period like pregnancy induced hypertension, antepartum hemorrhage and cord complications. Early identification of the risk factors and appropriate intervention is important to bring down perinatal mortality. Majority of LFD were macerated so that no cause could be identified even after autopsy. Twelve per cent of LFD and 15% of END were due to congenital malformations. Important congenital malformations included anencephaly, multiple congenital anomalies,

hydrocephalus, omphalocele and cystic hygroma. Bacterial infections were an important cause of END. The commonest organism isolated was Klebsiella which was sensitive to cefotaxime and ciprofloxacin. Others included E. coli, acinetobacter, pseudomonas and staphylococci. Ninety per cent of the patients had high risk factors for sepsis. So strict maintenance of asepsis and training of nursing and paramedical staff is important to reduce infections. Hyaline membrance disease constituted 15% of perinatal deaths.

More than 85% of perinatal deaths pccured in preterm and low birth weight babies. Important causes of death in preterm babies were perinatal hypoxia, HMD, infections, and intraventricular and pulmonary hemorrhage. Early identification of preterm labor and use of tocolytics and steroids and ventilator support are important to reduce mortality. More importance has to be given to reduce the LFDR. So it is important to identify high risk factors before pregnancy, during gestation and intranatally for appropriate care. Efforts should be made to reduce the incidence of prematurity and low birth weight babies. There should also be an increased awareness among pediatricians and obstetricians about the co-ordinated approach to bring down the perinatal mortality(5).

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