PERINATAL MORTALITY — A RETROSPECTIVE HOSPITAL STUDY

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SUMMARY

The incidence of perinatal mortality was retrospectively studied in a municipal general hospital in Bombay during four years. The overall perinatal mortality rate (PMR) was 46.32 per thousand. Among 496 perinates, 78.83 percent were low birth weight babies (less than 2500 gm). Birth weight was significantly related to antenatal care received (P<0.01) and age of mother (P<0.05). Maximum PMR is seen primiparous (36.42 percent) and teenage (31.44 percent) women. Among 224 neonatal deaths, 49.1 percent occurred within 24 hours.

Perinatal mortality rate is reliable index of status of women and their health and the quality of antenatal, natal and neonatal care. According to a cross-sectional survey (1977-79) commissioned by the Federation of Obstetrics and Gynaecological Society of India, spread over 123 institutions and including over 10,000 perinatal deaths; 3 perinates die every minute in India accounting for over 4000 perinatal deaths per day. The annual perinatal loss works out to be 1.5 million (Mehta A, 1981).

The date in respect of perinatal and neonatal deaths from the hospitals is relatively more accurate and reliable though it cannot always be extrapolated for planning interventions in the community (Singh M. 1988).

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As mentioned by Singh (1988) neonates weighing less than 1000 gm at birth are not salvageable due to lethal malformations and macreated still births. But other conditions like perinatal - neonatal hypoxia, trauma, infections and to a limited extent low birth weight are preventable, manageable and salvageable and hence should be the focus of plan of action.

Material and Methods

The present study comprised of four years retrospective data on perinatal mortality from 1984 to 1987 at Kamathipura Maternity Wards, attached to BYL Nair Hospital, Bombay.

Observations

Table I sets out yearwise distribution of PMR in our study. It was more or less same throughout study period with average PMR being 46.32 per 1000.

TABLE - I
YEAR WISE DISTRIBUTION OF PERINATAL MORTALITY RATE

	Year	Babies 1000 gm & Above+Stillbirths	Total No.of Deliveries	Perinatal mortality rate/1000
1.	1984	19 + 78 = 97*	*2210	43.9
2.	1985	54 + 77 = 131	2891	45.3
3.	1986	84 + 56 = 140	3121	44.9
4.	1987	67 + 61 = 128	2486	51.49
	Total	224 + 272 = 496	10708	46.32/1000

* For a period of 8 months

Sex : In affected group 288 were male and 208 were females. Perinatal deaths showed male preponderance (58.06 percent) over females (41.94 percent) in this study.

Birth Weight :

391 perinatal deaths (78.83 percent) showed birth weight below 2500 gms. Amongst those perinates whose mothers were registered for Antenatal Clinic 50 per cent showed weight 2000 gms and above. Birth weight which is the most important determinant of the chances of new born to survive, is significantly related to antenatal care received during pregnancy (Table II). When early neonatal deaths were considered in relation to their birth weights and duration of life it was seen that 46.4 percent of babies weighing less than 2000 gms died within 24 hours (Table III).

Mother's Age :

Birth weights of these perinates is significantly related to age of mother (Table IV (A) $P<0.05$). This also indicates that teenage pregnancies were risk factors for

TABLE - II
DISTRIBUTION OF BIRTH WEIGHT ACCORDING TO ANC CARE

ANC Care	Birth wt. in grams					Total
	< 1000	1000 – < 1500	1500 – < 2000	2000 – < 2500	>2500	
Yes	36	75	60	76	96	343
	*(10.49)	(21.86)	(17.49)	(22.15)	(27.98)	(100)
No	43	54	22	19	15	153
	*(28.10)	(35.29)	(14.37)	(12.41)	(9.8)	(100)
Total	79	129	82	95	111	496

* Figures in Bracket indicate percentage
Z = 4.41 significant at P< 0.01

TABLE - III
DISTRIBUTION OF EARLY NEONATAL DEATHS
ACCORDING TO BIRTH WT. AND DURATION OF LIFE

Birth Weight in gms.	<8 HRS	8 Hr- <1 day	1 Day - <2 days	2 days - <3 days	3 days - <7 days	Total
1. 1000	*15	*6	*4	*3	*3	31
	(48.38)	(19.35)	(12.90)	(9.6)	(9.6)	(100)
2. 1000-	18	13	9	7	18	65
<1500	(27.69)	(20.0)	(13.84)	(10.76)	(27.69)	(100)
3. 1500-	4	9	10	3	19	45
<2000	(8.88)	(20.0)	(22.22)	(6.66)	(29.23)	(100)
4. 2000-	12	7	6	2	11	38
<2500	(31.57)	(18.42)	(15.78)	(5.26)	(28.94)	(100)
5. >2500	14	11	4	10	5	44
	(31.81)	(25)	(9.09)	(22.72)	(11.36)	(100)
6. N.R.	1					
Total	64	46	33	25	56	224
	(28.57)	(20.53)	(14.73)	(11.16)	(25)	(100)

* Z = 6.11 * P<0.001 N.R. - Not Recorded

perinatal mortality, acting mainly through low birth weight.

Simultaneously when maternal age of perinates is compared with their paritis, it is found to be statistically significant (Table IV (B) P<0.001). It is evident that teenager primiparas featured maximum in this study of perinatal mortality cases.

Discussion

In our study, average PMR (per 1000 total births) was 46.32. In other studies conducted in urban areas it were 58.7 (Ghosh, S. et al 1980), and 56.7 (Joshi et al 1988). Singh et al (1982), Gosh et al (1971), Gupta et al (1972) and Gosh et al (1979) reported incidence from Delhi varying from 41.1 to 68.0 per thousand births. The nature of study (i.e. whether hospital based or population based) is the important factor for this variation.

Antenatal care during pregnancy showed significant influence on birth weight of new born (P<0.01). A large part of perinatal mortality occurs in babies of low birth weight (78.83 percent in this study). It is in conformity with Ghosh et al (1979), Singh et al (1982), Lopez et al (1986) and Khanna et al (1986). In low birth weight babies the incidence of 1st day neonatal deaths is higher than other neonatal deaths (P<0.001).

The risk of perinatal deaths was elevated for the first birth and dropped in second pregnancies, in the present series as well as in others (Lopes et al 1986, Khanna et al 1986). Perinatal mortality was highest in teenage women and in primis. Indian workers have reported higher incidence of perinatal mortality rates for teenage pregnancies, varying from 46 and 120 per 1000 births (Aras R.Y. 1988), Lopez et al 1988, Khanna et al 1986.

TABLE - IV
DISTRIBUTION IN RELATION OF AGE OF MOTHER

(A) To Birth Weight

B.W(gms)	Age In Years <20	21-<25	25-<30	30-<35	>35	Total
<1000	27	13	22	6	9	77
1000 to 1944	47	38	27	10	7	129
1500 to 1999	25	24	20	7	5	81
2000 to 2499	30	22	28	12	3	95
>2500	26	18	38	19	10	111
Total	155	115	135	54	34	*493

* Age was not recorded in 3 women. They are excluded.
$X^2 = 21.73$, df = 12 $P<0.05$

(B) To Parity

	Parity					
1	98	39	27	9	4	177
2	30	49	46	9	6	140
3	16	20	36	21	8	101
4	3	7	18	8	11	47
5 & above	1	0	8	7	5	21
Total	148	115	135	54	34	*486

* As in 10 women either age or parity was not recorded, they are excluded.
$X^2 = 176.67$ df = 12, $P<0.001$

Conclusion and Recommendation

Reduction in perinatal deaths could be facilitated by increasing awareness for registration of pregnant women for antenatal care. Early registration during pregnancy (and not at 7 months) can certainly help to prevent future consequences of low birth weight babies, still births and neonatal deaths. Both doctors as well as clients should beaware of this fact. Simultaneously prevention of teenage pregnancies either by prevention of teenage marriages or by adoption of appropriate, family planning measures is important in prevailing sociocultural context. Rendering comprehensive health care facilities during antenatal, intranatal and post natal period is not difficult; but complete and adequate utilization of the same by women is doubtful and therefore mass awareness is important strategy.

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