

NEONATAL MORTALITY OBSTETRICIANS HAVE THE LAST WORD!

by

LUCKY JAIN
SUSHIL KABRA
SHABNAM SEN
DEEPAK SHIVPURI
USHA SHARMA

and

S. SAXENA

SUMMARY

Neonatal mortality data composed of 1322 consecutive deaths over a three year period in our neonatal unit has been analysed. The infants were grouped into four categories according to their birth weight. Only one diagnosis was attributed to each case. The immediate cause of death was used when it was considered more severe than the underlying cause.

The most common cause of death was immaturity which alone was responsible for 65.4% deaths. While no change was observed in the number of deaths due to other causes, a reduction in prematurity rate and deaths resulting thereof led to a remarkable reduction in neonatal mortality, emphasizing, once again, that the ball is in the obstetricians' court.

Introduction

Over the last decade, both perinatal and neonatal mortality rates are reported to have declined considerably in India (Damodar, 1983; Bhargava, 1981) and in many western countries (Gordon, 1977); Manniello, 1977). Largely owing to the improved medical care during this period of life. Advanced obstetric and paediatric management are considered to have reduced the number of stillbirths and the mortality rate among preterm live births

(Mehta and Jayant 1981; Bhargava and Mittal 1981).

There has been some dispute recently, however, about the effect of modern medical care on the mortality figures amongst very low birth weight babies with Bhatia *et al.* (1984) reporting a 5 times higher mortality in the preterms as compared to full terms.

Rush *et al.*, (1976) have in their analysis of mortality statistics, emphatically reported that reduction in preterm deliveries is the only answer to reducing neonatal mortality, thus shifting the emphasis from neonatal care to improved obstetri-

From: Department of Pediatrics, Sir Padampat
M.C.H.I. and S.M.S. Medical College, Jaipur.
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cal care for reducing neonatal mortality (Bhatia, 1984).

Material and Methods

The study is based on the data of neonatal mortality from the records of the neonatal unit attached to the State Zenana Hospital, Jaipur, which serves as a referral centre covering an area with a population of about one million.

During the 3 year period from 1981 to 1983 there were a total of 6589 admissions to the neonatal unit and of these 1322 (20.06%) died. The infants were grouped into 4 birth weight categories : under 1000 gms. 1001 — 1500 gms., 1501 — 2000 gms. and above 2000 gms.

The following principles were used in classifying the cause of death :

— Final diagnosis and cause of death were based on clinical diagnosis and laboratory findings as deceased neonates are not routinely subjected to autopsy in our hospital owing to the social customs of our society.

— Only one diagnosis was attributed to each case.

— The immediate cause of death was used when it was considered more severe than the underlying cause, but the underlying cause of death was taken when it alone would have been severe enough to cause death.

— The diagnosis of immaturity was used when there were no findings suggestive of the cause of death in a clinically immature newborn.

Results

Table I lists the annual admissions and neonatal deaths with the consequent mortality percentage. The number of admissions remained fairly constant over the three years period.

Table II shows distribution of deaths by weight group with 25.4% cases belonging to the group less than 1000 gms. 30.9% to 1001 — 1500 gms. 21.4% to 1501 to 2000 gms. and 22.3% to more than 2000 gms.

TABLE I
Annual Distribution of Admissions and Neonatal Deaths

Year	Admissions	Deaths	Mortality Percentage
1981	2,169	475	21.89%
1982	2,121	495	23.34%
1983	2,299	352	15.31%
Total	6,589	1,322	

TABLE II
Annual Distribution of Neonatal Deaths by Weight

Year	Weight			
	Below 1000 gms.	1001 — 1500 gms.	1501 — 2000 gms.	Above 2000 gms.
1981	117	169	85	104
1982	126	162	99	108
1983	93	78	78	82
Total	336	409	283	294

Table III and IV list the distribution of deaths by main causes. Immaturity emerged as the single most important cause of death contributing directly to 65.4% of deaths followed by asphyxia (17.6%), aspiration (10.7%), septicaemia (7.3%) and IRDS (3.2%). In many other deaths taken to have been caused by the above causes, immaturity was a major underlying cause.

tion it was found was mainly due to the reduction in number of immature infants admitted to unit with a consequent reduction in deaths resulting thereof.

Discussion

Based on the available information and a review of literature, it is clear that 50% of deaths in infancy occur during

TABLE III
Distribution of Neonatal Deaths by Underlying Cause of Death

Cause of Death	1981	1982	1983
Immaturity	287	326	252
Aspiration	39	37	65
Septicaemia	43	26	28
IRDS	26	9	7
Asphyxia	66	82	85
Others	34	15	15

TABLE IV
Distribution of Main Causes of Neonatal Deaths by Weight Groups

Cause of Death	Below 1000 gms.		1001-1500 gms.		1501-2000 gms.		Above 2000 gms.	
	No.	%	No.	%	No.	%	No.	%
Immaturity	322	95.8	290	70.9	123	43.5	10	3.4
Aspiration	0	0	22	5.4	40	14.1	73	24.9
Septicaemia	0	0	27	6.6	40	14.1	20	6.9
Asphyxia	8	2.4	49	11.9	51	18.0	125	42.5
IRDS	4	1.2	11	2.7	16	5.6	11	3.8
Others	2	0.6	10	2.5	13	4.5	54	18.3

In infants of the first two categories (Less than 1500 gms.) immaturity was the cause of death in 82.4% cases, this outnumbering all other causes put together. In infants above 2000 gms., asphyxia was the major cause of death.

In 1982, of the 2121 admissions, 495 of died indicating a neonatal mortality rate of 23.3%. Of these, 326 (66 %) were caused by immaturity alone. In 1983, of the 2299 admissions only 352 died giving a neonatal mortality rate of 15.3%. This reduc-

the neonatal period (Reddaiah and Nath 1975; Kumar 1982). Neonatal mortality statistics of a given population are related to several factors such as racial composition, socio-economic status, obstetric background and quality of available obstetric and neonatal care facilities.

Immaturity clearly outnumbers all other causes of neonatal deaths, its toll being further boosted if one were to include numerous other cases in which immaturity had been a contributory factor.

Numerous workers in India (Mehta, 1981; Singh *et al* 1982) and in west (Gordon, 1977, Jones, 1979) have reported similar results.

The mortality rate of 667 among preterm babies in our study is alarming but similar observations have been made by other authors also. Singh (1982) reported that low birth weight infants accounted for 75.5% of total neonatal deaths. The mortality among preterm babies was 8 times of overall neonatal mortality. Numerous studies have convincingly shown that neonatal mortality bears linear inverse relationship with birth weight and gestational age.

On further analysis of our data, one finds no reduction in the deaths due to causes other than immaturity despite significant additions in diagnostic and therapeutic armamentarium and better ways of fetal salvage acquired by our neonatal unit over the years of study.

There has been a steady decline in the perinatal mortality in the last few years, Gordon (1976) and Rush (1976) reported that reduction in overall mortality rate is due to the decreasing number of infants in the high-risk group rather than to any improvement in survival rates among the different weight groups.

Prognosis of preterm babies improves if they are born after a longer gestation. In order to reduce the mortality figures, the prevention of preterm births seems to be the most immediate practical goal, even though intensive neonatal care can obviously save many of those low birth

weight infants born inspite of efforts to maintain pregnancies to term.

It is therefore desirable that in the event of premature labour, the obstetrician must utilise all recently recommended chemical agents to prolong in utero existence of fetus to achieve any striking reduction in neonatal mortality (Singh, 1979).

But the last word, on this occasion may be with the obstetricians.

It is not for a pediatrician to say how near the obstetricians are to control spontaneous premature labour, but interest in seeking the predisposing causes with a view to preventing spontaneous labour is already increasing.

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