



Perinatal Mortality Rate (PMR) in Dhaka National Medical College & Hospital (DNMCH), Bangladesh.

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Abstract

Introduction: *Perinatal mortality is a measure of the combined fetal and early neonatal mortality. The perinatal period covers the period leading up to birth and the first week of life; deaths occurring in this period are largely due to obstetric causes. More than 3.3 million stillbirths and over 3 million early neonatal deaths are estimated to take place every year. In the year 2000, over 6.3 million perinatal deaths occurred worldwide: almost all of them (98%) occurred in developing countries and 27% in the least developed countries. Perinatal mortality rates vary widely and may be below ten for certain developed countries and more than ten times higher in developing countries. Globally perinatal mortality rate (PNMR) is 52 per thousand live births, whereas in Bangladesh PNMR is 80.*

Aims and objective: *To find out the incidence of PMR in admitted cases. To sort out the cause of perinatal death. To reduce the PMR*

Study Design: *Prospective, cross sectional study. Study setting: In the department of Obstetrics and Gynaecology, Dhaka National Medical College Hospital (DNMCH). Participants: All perinatal deaths happened in DNMCH during the study period. Methods: simple statistical method.*

Results: *Perinatal mortality is 21.54%, total number of births 2507, total number of still birth 31, total number of early neonatal death 23 and total perinatal death 54. Main factor behind the perinatal mortality rate were evaluated. One of the main factor was inadequate ANC, there is no birth plan during ANC, no linkage of ANC with emergency Obstetric Care (EOC) services.*

Conclusion: *Present study found many factors responsible for higher perinatal mortality rate which are preventable. Lack of ANC and delay in taking decision is the most important factor identified which can be addressed by increasing awareness among public and health care provider at primary and secondary level.*

INTRODUCTION

Perinatal mortality is a measure of the combined fetal and early neonatal mortality. The perinatal period covers the period leading up to birth and the first week of life; deaths occurring in this period are largely due to obstetric causes. More than 3.3 million stillbirths and over 3 million early neonatal deaths are estimated to take place every year. In the year 2000, over 6.3 million perinatal deaths occurred worldwide: almost all of them (98%) occurred in developing countries and 27% in the least developed countries¹. Perinatal mortality rates vary widely and may be below ten for certain developed countries and more than ten times higher in developing countries².

Globally perinatal mortality rate (PNMR) is 52 per thousand live births, whereas in Bangladesh PNMR is 80³.

Perinatal mortality is defined as mortality in fetuses and infants that weight over 1000 grams at birth, who die before delivery or before the end of 1st week of extra uterine life. WHO recommends that for uniformity of international statistics, a weight 1000 gram (or when weight is unknown, gestational age of 28 weeks & CRL-35 cm) can be used to determine this rate. The use of birth weight rather than gestational age gives more accurate figure⁵.

Perinatal mortality includes still births and early neonatal deaths; the rates are given per thousand births⁶

Jeopardy to life is greatest during the perinatal period than at any subsequent time. Current data indicate that the number of lives lost during the 5 month period from the 20th week of gestation to

the 7th day after birth is almost equal to the number lost during the next 40 years of life⁷. According to the world health report 2001 perinatal condition account for more than 4% (2.4 million) of the death in the world, most of them in the developing countries⁸.

The important obstetric cause of perinatal deaths are preterm births (G.A. less than 36 weeks) which covers about 60%⁹, low birth weight, prolong/difficult labour, ante partum haemorrhage, hypertensive diseases of pregnancy, maternal diseases and congenital abnormalities. In about third of these cases no cause is found when analyzed according to the fetal and neonatal causes. A great portion of perinatal death, mothers attend the hospital with Intra Uterine Death (IUD).

With the progress of a country there is always a progressive fall of Perinatal Mortality Rate (PMR). Perinatal mortality and neonatal mortality rate have often been used as an indicator of the standard of a country's social, educational and health care system¹⁰.

For preventing of perinatal mortality at first we have to find out the factors that influence the Perinatal Mortality Rate (PMR). In Bangladesh, we know most of the deliveries occur at home and are not recorded. It is difficult however, to have data of high quality on all of these risk factors and to able to analyze the information yet to conducted.

To make a national policy for reduction of Perinatal Mortality Rate (PMR), information may be obtained from hospital record obstruction like hospital chart, public health records, autopsy, birth

& death certificates, health care providers etc. However socio-economic and health care services are improving in our country and there is marked reduction of under five children mortality due to successfully immunization program in Bangladesh and this inspired me to take an attempt to explore

the Perinatal Mortality Rate (PMR) in Dhaka National Medical College Hospital (DNMCH). This could be a step forward in identifying and assessment of the Perinatal Mortality Rate (PMR) in Bangladesh and take necessary step to reduce it throughout the country.

RESULTS

Table I: Deliveries and perinatal mortalities (n=52)

	No.	%
Total no. of births	2507	
Total perinatal death	54	
Total no. of stillbirths	31	57.4
Total no. of early neonatal death	23	42.6
Perinatal mortality rate/1000 live births	21.54	

Total birth 2507, among these 31 (57.4%) were still births and 23 (42.6%) were early neonatal death and perinatal mortality rate 21.54.

Table II: Status of antenatal check up (n=52)

ANC	SB (dead on Ad.) (n=19)		SB (alive on Ad.) (n=11)		E.N.D (n=22)		Total P.N.D (n=52)	
	N	%	N	%	N	%	N	%
Irregular/No	10	52.6	9	81.8	14	63.6	33	63.5
Regular	9	47.4	2	18.2	8	36.4	19	36.5

Chi square = 2.56, df = 2, p value = 0.278

Regarding the antenatal checkup it was observed that 33 (63.5%) received irregular or no antenatal check up and 19(36.5%) received regular antenatal checkup.

Table III: Complication during pregnancy (n=52)

Complication during pregnancy	SB (dead on Ad.) (n=19)		SB (alive on Ad.) (n=11)		E.N.D (n=22)		Total P.N.D (n=52)	
	N	%	N	%	N	%	N	%
PE	11	21.2	9	17.3	12	23.1	32	61.6
Eclampsia	0	0.0	0	0.0	0	0.0	0	0.0
GDM	3	5.8	2	3.8	5	9.6	10	19.2
APH	3	5.8	0	0.0	2	3.8	5	9.6
Oligohydramnions	1	1.9	0	0.0	2	3.8	3	5.7
PROM	1	1.9	0	0.0	1	1.9	2	5.7
IUGR	0	0.0	0	0.0	0	0.0	0	0.0

Regarding the complication during pregnancy majority 61.6% (21.2%+17.3%+23.1%) patients had PE 19.2% (5.8%+3.8%)+9.6%), GDM, 9.6% (5.8%+3.8%+3.8%), APH, 5.7% (1.9%+3.8%) oligohydramnions and 5.7% (1.9%+1.9%) PROM.

Table IV: Gestational age distribution of the patients (n=52).

Gestational age (weeks)	SB (n=30)		SB (alive on Ad.) (n=11)		Total P.N.D (n=52)	
	N	%	N	%	N	%
<32	2	6.7	1	4.5	3	5.8
32 - 37	17	56.7	9	40.7	26	50.0
38 - 42	9	30.0	12	54.5	21	40.4
>42	2	6.7	0	0.0	2	3.8

Table VI shows that majority (50.0%) patient's gestational age belongs to 32.37 weeks followed by 40.4% cases were 38-42 weeks, 5.8% cases >32 weeks and 3.8% cases > 42 weeks.

Table V: Cause of death (n=54)

Causes	SB (dead on Ad.) (n=19)		SB (alive on Ad.) (n=12)		E.N.D (n=23)		Total P.N.D (n=52)	
	N	%	N	%	N	%	N	%
Asphyxia (main due to complication of pre-eclampsia and eclampsia)	12	63.2	7	58.3	11	47.8	30	55.5
Unknown	3	15.8	2	16.7	3	13.0	8	14.8
Diabetes mellitus	2	10.5	1	8.3	2	8.7	5	9.3
Preterm	1	5.3	1	8.3	2	8.7	4	7.4
Congenital anomalies	1	5.3	0	0.0	2	8.7	3	5.6
Post term	0	0.0		0.0	2	8.7	2	3.7
Chorioamnionitis	0	0.0	1	8.3	0	0.0	1	1.9
Cord prolapsed	0	0.0		0.0	1	4.3	1	1.9

Majority (55.5%) cases, cause of death was asphyxia (complication of preeclampsia and eclampsia), followed by 5 (9.3%) diabetes mellitus, 4 (7.4%) preterm, 3(5.6%) congenital anomalies, 2(3.7%) post term and 8(18.8%) was unknown.

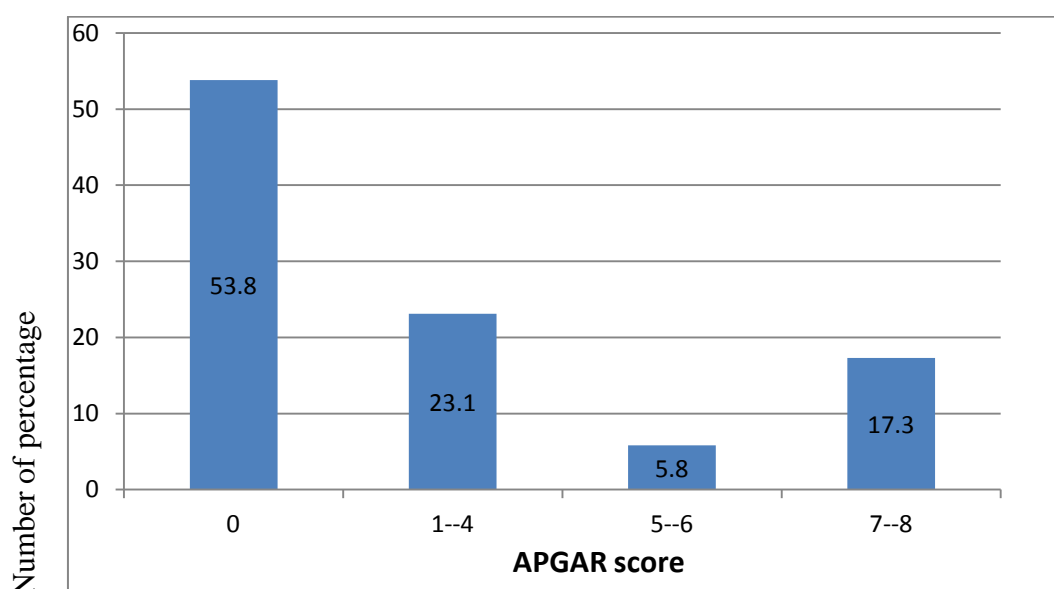


Figure 9: Bar diagram showing at 1 minute APGAR score in case of END

The above figure shows that among the 22 cases of END 72.7% born with a APGAR score 4 or below, 22.7% had 5 -6 score and only 4.5% had score 7 – 8 at 1 minute after birth.

DISCUSSION

This cross sectional study was carried out with an objective to find out the incidence of PMR in admitted cases and to sort out the cause of perinatal death. Globally perinatal mortality rate (PNMR) is 52 per thousand live births, whereas in our country PNMR is 80, which is very high. In this study it was observed 21.54 per thousand total births. A perinatal care survey in South Africa 2000-2002, showed PNMR in their country's metropolitan areas, cities and towns to be 36.2, 38.6 and 26.7 per thousand live births respectively 42. In our neighboring country India PNMR in a 1997 study was 42.3 43 (study conducted in NRS medical college). In Nepal it is 47 44. In this study it came as only 21.54 a great improvement indeed. A two years study of perinatal death in November 2003 to October 2005 was done Kathmandu Medical college was done which show almost similar result that is 21.1. Number of still birth was 57.4% and early neonatal deaths (ENND) were 42.6%, which is close to another study carried out in Bangladesh in 2003 where still births were 53.5% and ENND 46.5%45. Hinderaker et al. (2003) did a study in rural northern Tanzania; still births being 55.0% and END 44.0%, which is comparable with the presents study.

A total of 52 patients age ranged from 18 to 40 years pregnancy were taken. Regarding the antenatal checkup it was observed in this current study 36.5% women were received regular antenatal check up and 63.5% received irregular/ no antenatal checkup. Most (90.0%) of the patients were immunized and only 10.0% had

no immunization. In this study it was observed that the knowledge about the necessity and the practice of antenatal checkup was poor among the study patients.

In this current series it was observed that the complications during pregnancy PE was predominant, which was 61.5% of the total cases, 9.6% APH, 19.2% GDM, 3.8% PROM and 5.8% oligohydramnions.

Incerpi et al. (1998) found in their study that the average gestational age was 32 weeks, with 26% >36 weeks and 29% <28 weeks. Manandhar et al. (2006) reported in their study that perinatal death were 46.9% belongs 28-36 weeks, 34.4% in 37-36 weeks and 6.2% in > 42 weeks. Hilder et al. (1998) observed that in their retrospective analysis of 171,527 notified births (1989- 1991) and reported that the perinatal death was higher in early gestational age. About 60% of total perinatal deaths were preterm births (G.A less than 36 weeks), which is found in another study 10. All the above studies shows perinatal mortality mostly found in the preterm baby, which is similar with the current study, where 50.0% patient's gestational age belongs to 32-37 weeks,40.4% in 38-42 weeks, 5.8% in <32 weeks and 3.8% in more than 42 weeks.

Labour was complicated by PE in most (53.8%) of cases and the other complications during labour were 23.1% eclampsia, 5.8% APH and 17.3% GDM.

In the present study it was observed that 55.5% cause of death was asphyxia which is mainly due to complication of preeclampsia. This was the prime cause of death is this series. Hinderaker et

al. (2003)¹² reported in their series that second most commonest cause of perinatal death was asphyxia related cause.

A previous related study show the most common primary death was spontaneous preterm delivery followed by intrapartum asphyxia⁹. But another study show only 5.6% still born is due to hypertensive disorder¹³. In present series death due to preeclampsia is very high, this may due to lack of antenatal check up were most of the study population.

Another important cause of perinatal death was unknown which was 14.8%. A perinatal cases survey in South Africa 2000-2001, found this as a most commonly recorded primary odstetric cause of perinatal death⁴². This is also a very important cause of perinatal death in developed countries (33.2%).

Congenital malformation was the cause of perinatal death in 5.6% cases. A similar indential incidence was found in the Kathmandu Medical College, Nepal and it was about 13.5%⁴⁴. In developing countries, the incidence of congenital anomalies is usually less for example only 6% in Tanzania¹⁴. In developed countries however, this is an important cause of perinatal death¹⁵.

Gestational diabetes is one of the important cause of perinatal death which was 9.3% in this series and this was also due to lack of antenatal checkup. Preterm delivery caused perinatal death 7.4% cases in this study. It was less because here most of the preterm delivery occurred due to preeclampsia which was included on the asphyxia related baby. Pattinson (2003) showed in this study that the most common primary cause of

death in the city and town group was spontaneous preterm delivery (6.79/1,000 births).

In this current study death due to infection 1.9%, post term 3.7% chorioamnionitis 1.9% and cord prolapse 1.9%.

CONCLUSION

Reduction of perinatal mortality and morbidity has been given the prime importance by WHO and many countries worldwide, but Bangladesh could not achieve satisfactory improvement regarding this. It may be due to illiteracy, ignorance, poor socio-economic condition, lack of ANC. There is also lack of a national survey on perinatal mortality rate in Bangladesh.

Present study found many factors responsible for higher perinatal mortality rate which are preventable. Lack of ANC and delay in taking decision is the most important factor identified which can be addressed by increasing awareness among public and health care provider at primary and secondary level.

Policy makers may take short term and long term strategies to address perinatal mortalities. Lastly, it is suggested that some strategic restructuring of the EOC service at it's various levels may contribute in reducing perinatal mortality rate (PNMR) further.

DNMC is a private hospital but it is very old and low cost. Most of the doctors here are post graduate. As many of the trainee doctors are taking most graduate training from here, So doctor patients ratio are more. For this reason patients care are much better here. I think this play a great role for the reduced perinatal mortality rate.

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