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PERINATAL MORTALITY: AN AUDIT IN A TERTIARY CARE HOSPITAL.

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ABSTRACT:

BACKGROUND: *The objective of this study was to determine the rate and to analyse the causes of perinatal mortality (PNM) at Liaquat University Hospital, Hyderabad, Pakistan.*
METHODOLOGY: *This analytical study was conducted over a period of 1 year (Jan 2009-Dec 2009) at Department of Gynaecology and Obstetrics, Unit II Liaquat University of Medical and Health Sciences, Jamshoro / Hyderabad. All cases of perinatal deaths (fetal deaths after 24 weeks of pregnancy and neonatal deaths within 7 days after birth) registered during the study period were included in the study. Study variable of each case was computed on a pre designed proforma.*
RESULTS: *A total of 282 perinatal deaths were recorded out of 2413 deliveries conducted during the study period. PMNR was calculated as 116.86 per 1000 births. It included 222 still births giving a still birth rate of 92 per 1000 and 60 early neonatal deaths giving a early neonatal death rate of 24.86 per 1000 births. Increase frequency of perinatal deaths were found in unbooked cases (80.85%), who were in age group of 25 to 35 years and having parity of 1-5. More perinatal deaths were recorded at gestational age of 31-36 weeks and with male gender preponderance. Regarding the cause of perinatal deaths, they were in decreasing order of frequency, antipartum hemorrhage (28.72%) followed by hypertensive disorder of pregnancy (20.92%), obstructed labour (13.12%), ruptured uterus (8.15%), preterm prelabour rupture of membranes (7u.80), congenital anomalies (5.31%), birth asphyxia (3.90%), multiple pregnancies (3.19%), chorioamnionitis (2.48%) and diabetes mellitus (2.12%). In 12 cases (4.25%) no cause was identified.*
CONCLUSION: *Severe maternal morbidity has significant impact on PNMR. Majority of PNDs could be prevented if basic medical facilities including basic hygiene, access to trained health workers and access to contraception are made available near women's home.*

KEYWORDS: perinatal mortality, PMR, perinatal death,

INTRODUCTION:

Perinatal mortality or Perinatal death refers to the death of a fetus or neonate and is the basis to calculate Perinatal mortality rate (PNMR)[1]. PNMR is defined as the number of still births and deaths in the first week of life per 1000 live births and still births. It is usually reported on an annual basis. PNMR is an index of the efficiency and quality of maternal and new born health care services available in a country[2]. It also enables comparisons to be made among nations, regions and indeed individual hospitals.

Each year 10.7 children die under the age of five, two third of them during the perinatal period. In the less developed countries where 98% of reported neonatal deaths and 97% of reported still births occur, these births and deaths are not always registered[3]. While PNMR has reached below ten in many developed countries, developing countries continue to have alarmingly high PNMR. The highest PNMR occurs in sub-Saharan Africa, followed by Asia and Latin America. Although the exact medical causes may differ from country to country, the problem is simple, i.e. the lack of appropriate and quality services confounded by poverty[4]. Accurate data of PNMR in developing countries is often lacking, however, WHO estimates it between seven to eight million perinatal deaths annually, which give a global PNMR between 50 to 60. The estimated PNMR of Pakistan in 57-81/1000 births[5,6].

The purpose of this communication is to document PNMR in our setting and to analyze the causes of high perinatal loss and to consider the strategy for improving pregnancy outcome.

MATERIAL & METHOD:

The study was conducted in the department of Gynae and Obst Unit II of LUMHS for the period of one year from January 2009 to December 2009. LUMHS is a tertiary care hospital and provide health care facilities to the citizens of Hyderabad as well as to a huge population of rural Sindh. We performed an analytical review of all perinatal deaths that occurred in patients admitted in our department during the study period. The study sample was all cases of fetal deaths occurring after 24 weeks gestation and all early neonatal deaths occurring within 7 days after birth. Each case was analyzed by using a predesigned profarma. Data were collected for maternal characteristics (Age, parity, gestational age, booking status), cause of perinatal death and perinatal outcome (still birth, early neonatal death). Finally results were compiled and placed in tabulated form.

RESULTS

A total of 282 perinatal deaths were recorded out of 2413 deliveries conducted during the study period, giving a PNMR of 116.86 per 1000 births. In 282 perinatal deaths, there were 222 (78%) still births giving a still birth rate of 92 per 1000 birth and 60 (22%) early neonatal deaths giving a ENND rate of 24.86 per 1000 births (Table 1). Out of 282 cases of perinatal deaths, 228 (80.85%) ware unbooked and 54 (19.14%) were booked cases. Regarding the association of maternal characteristics with perinatal death (Table 2), majority of women were in age group of 25 to 35 years and were para 1-5. The gestational age ranged from 24-42 weeks and highest frequency of perinatal deaths were recorded between 32-37 weeks. There was slight preponderance of perinatal deaths in male fetuses (55%) than in female fetuses (45%). As far as causes of perinatal deaths were concerned, they are shown in Table 3 in descending order of frequency. The leading cause was ante partum hemorrhage (28.72%) followed by hypertensive disorders of pregnancy (20.92%), then obstructed labour (13.12%) and ruptured uterus (8.15%). Preterm prelabour rupture of membranes (PPROM) contributed to 7.80% of perinatal deaths, congenital anomalies 5.31%, birth asphyxia 3.90%, multiple pregnancies 3.19%, chorioamnionitis 2.48% and diabetes mellitus 2.12%. In 12 (4.25%) cases cause remains

(TABLE 1)
FREQUENCY OF PERINATAL DEATHS

Deliveries	2413
Perinatal deaths	282
Perinatal Mortality Rate	116.86/1000Births
Still Births	222
Still Birth Rate	92/1000 Births
Early Neonatal deaths	60
Early Neonatal death Rate	24.86/1000 Births

(TABLE 2)
ASSOCIATION BETWEEN MATERNAL &FETAL CHARACTERISTICS AND PERINATAL DEATH

Variable	Number of cases	Percentage
Booking Status		
Un booked	231	81.91%
Booked	51	18.08%
Maternal Age		
<25 years	11	3.90%
25-35 years	197	69.85%
>35 years	74	26.24%
Parity		
0-1	79	28.01%
2-5	121	42.90%
>5	82	29.07%
Gestational Age		
24-30 weeks	41	14.53%
31-36 weeks	167	59.21%
37-41 weeks	74	26.24%
Fetal Gender		
Male	154	55%
Female	128	45%

(TABLE 3)
CAUSES OF PERINATAL DEATHS

Cause of Perinatal death	NO : of cases	percentage
Ante Partum hemorrhage	81	28.72
Placental Abruption	47	16.66
Placenta Praevia	34	12.05
Hypertensive disorders of Pregnancy	59	20.92
Obstructed Labourm	37	13.12
Rupture Uterus	23	8.15
Preterm Prelabour rupture of fetal membranes	22	7.80
Congenital anomalies	15	5.31
Birth Asphyxia	11	3.90
Multiple pregnancies	9	3.19
Chorioamnionitis	7	2.48
Diabetes in pregnancies	6	2.12
Unexplained	12	4.25

unexplained.

DISCUSSION

Pregnancy and child birth complications are a huge burden in developing countries where one in four women face acute or chronic complication[7]. The impact of these complications result in high PNMR in these countries which is obvious in the present study.

The PNMR we found in our study was 116.86 per1000 births which is alarmingly high. The reason behind is that being a tertiary care hospital mostly high risk unbooked cases are received, referred from whole rural Sindh as well as complicated cases referred from private hospitals of Hyderabad city. The high PNMR we found in our study is not much different from other studies conducted in different national tertiary care hospitals during the last 10-15 years[5,8,9,10]. The study demonstrated a very high still birth rate (92/1000 births). Still birth is one of the most devastating outcomes of pregnancy and is an important global health problem, particularly in developing countries, where 99% of annual reported still births occur[7].

The leading cause of perinatal death we found in our study, was ante partum hemorrhage (28.72%).APH is a relatively common complication of pregnancy, occurring in approximately 4-5% of antenatal patients[11]. It continues to be an important contributor of PNM as demonstrated in different studies[5,12-14]. A study by Serwar T et al found unexpectedly high PNM (67.9%) in cases of APH[12]. Regarding the cause of APH, placental abruption was found in 47 (16.66%) cases and placenta praevia was found in 34 cases. The fetal death is more likely in cases of placenta abruption than placenta praevia[15], mostly due to prematurity and hypoxia[16]. As majority of patients of APH presented with IUD so that any management protocol is of little help in preventing PNM. Hypertensive disorders counted for 20.92% of PND in the study. Hypertension is one of the clinical conditions which concern most obstetricians because of its high incidence, and serious fetal prognosis[17]. It is a leading cause of maternal and perinatal mortality not only in developing world but also in developed world[18]. Incidence of hypertension in pregnancy in Pakistan is almost same as in other parts of world but maternal and fetal outcome is very bad due to lack of antenatal care and poor medical facilities[19].

Obstructed labour was responsible for13.12% of PND and ruptured uterus for 8.15% of PND in this study. Advances in obstetric care have made these complications nearly obsolete in developed world[19]. However, the problem continues to plague thousands of women's life each year in developing world. In India, it was responsible for 8% of maternal deaths and an alarmingly high perinatal mortality (43.27%)[21]. Provision of good obstetric care including early referral and timely intervention are suggested to reduce PNMR.

Congenital anomalies accounted for 5.31% of perinatal deaths. Incidence of congenital malformations is slightly higher than the western world, the reason being very high rate of consanguineous marriages, infections and injudicious use of drugs in pregnancy[19]. Recognition of the importance of adequate folic acid intake in a woman of reproductive age, for the prevention of birth defects from teratogenic infectious agents and drugs, is very helpful.

Multiple pregnancies and births have profound perinatal consequences in terms of morbidity and mortality. Perinatal mortality in twins is nearly four times higher and in triplets six times higher than in singleton[22]. It contributed 3.19% of perinatal death in the study and all cases were of twin pregnancy. Diabetes in pregnancy which occur in over 8% of all pregnancies[23], accounted for 2.12% of perinatal death in the study. Multiple studies have demonstrated the association of diabetic pregnancy and adverse pregnancy outcome[24,25]. Abolfazl et al in their study also demonstrated nine fold increase risk of still births in diabetics as compared to non diabetic mothers[23]. Late diagnosis, non compliance to therapy and unbooked status of patient are associated with increased risk of perinatal death. Hence early detection and prompt treatment, with due regard to time and mode of delivery are mandatory. Preterm prelabour rupture of fetal membranes accounted for 7.80% of perinatal deaths. It is the leading identifiable cause of preterm delivery. Prematurity is the principal risk, associated with perinatal mortality.

There was slight preponderance of perinatal deaths with male gender in our study sample which was also demonstrated in other studies[5,12,10]. Regarding the association of maternal age and parity with PND, increase frequencies were seen in women of 25-35 years of age and who were Para 1-5.

The study highlights the existing situation of maternal and perinatal health care facilities available in our region. Although the efforts to provide and improve the primary health care services are going on at government and nongovernmental level still a lot needs to be done to ensure a safe pregnancy and child birth in our country.

CONCLUSION:

Severe maternal morbidity has significant impact on PNMR. Majority of PNDs could be prevented if basic medical facilities including basic hygiene, access to trained health workers and access to contraception are made available near women's home, not only in quantitative terms but also in respect to quality.

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