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PERINATAL MORTALITY AND ITS RELATED OBSTETRICS RISK FACTORS

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ABSTRACT

Objective: To determine the perinatal mortality rate and its related obstetric risk factors in our set up.

Material and Methods: It was a descriptive study conducted in the Obstetrics & Gynaecology Unit A of Khyber Teaching Hospital (KTH), Peshawar from January 2011 to December 2013. All perinatal deaths including still births (SB) and early neonatal deaths (ENNDS) within 7 days of birth after 24 weeks of gestation were included, while pregnancies less than 24 weeks of gestation were excluded from the study. The relevant information was collected through a proforma which contained variables including maternal age, booking status, parity and social status. Pregnancy related complications, medical disorders, labour details and fetal condition leading to perinatal deaths were also taken into account.

Results: A total number of 11260 patients were analyzed for perinatal mortality. Out of these there were 740 perinatal deaths giving a perinatal mortality rate (PNMR) of 65.7/1000 total births. There were 605 SBs and 135 ENNDS. Among these 88% of the women were unbooked. Commonest risk factor was antepartum haemorrhage (APH) (29.7%), followed by hypertensive disorders of pregnancy (PIH) (26.7%) and mechanical factors affecting labour (14.5%). Congenital abnormalities were found in 10% while maternal medical disorders were observed in 4.5% of the cases. However in 5.6% of the cases, the cause remained unknown.

Conclusion: Perinatal mortality is still high in our part of the world and is largely the result of poor maternal health, the socio economic status, lack of health awareness and inadequate care during antepartum, intrapartum and post partum period.

Key Words: Perinatal mortality, still birth, early neonatal death.

INTRODUCTION

Perinatal mortality is a sensitive indicator of the quality of services provided to pregnant women and their newborn. Perinatal mortality audit in an institution helps to find out not only the status of quality of services but also helps to determine the important causes of perinatal deaths and measures to reduce it. According to WHO, the number of perinatal deaths worldwide is greater than 7.6 million, with 98% of these deaths occurring in developing countries[1]. Every year, out of 5.3 million births in Pakistan 270,000 newborn die, a rate of neonatal mortality rate of Pakistan is 61-81/1000 births[2]. Achieving Millennium Developing Goals (MDGs) probably remains a dream in our part of the world.

Health of a mother determines the health of her child and maternal health is affected by health over the life cycle starting from a girl's childhood through adolescence and pregnancy. Complications during pregnancy and labour therefore remain important factors to determine fetal and neonatal survival and health[3]. Our hospital, being a tertiary level facility receives complicated cases from urban as well as rural areas of KPK. As many births take place in domiciliary settings and are poorly reported, specially still births[4], reliable reports on perinatal mortality are lacking. Vital statistics obtained through this study may serve an important source of information to guide the public health policy makers and health care providers.

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MATERIAL AND METHODS

It was a prospective study carried from January 2011 to December 2013. All patients delivered in Gynae A Unit of Khyber Teaching Hospital were included in the study, the perinatal deaths including still birth and ENND within 7 days of birth and after 24 weeks of gestation were taken into account. Those with less than 24 weeks of pregnancy were excluded. The data was collected through a proforma including maternal data such as age, parity, period of gestation, complications during pregnancy and labour and mode of deliveries, perinatal data included birth weight, reported gestation, age,

sex, APGAR score at birth, age and possible causes of death.

RESULTS

During 3 years period 11260 deliveries took place. There were 740 PNDs with a PNMR of 65.7/1000 births. There were 605 SBs and 135 ENNDs (Table 1). The maternal demographic features are shown in Table 2. The risk factors for the perinatal loss are summarized in Table 3. Main risk factors were antepartum haemorrhage (APH) in 29.7% cases followed by hypertensive disorders (26.7%) and mechanical causes affecting labour (14.5%).Congenital anomalies were found in 10% while medical disorders in mothers were responsible for 4.5% of the cases. However, 5.6% cases had no obvious detectable reason. Foetal weight estimation at birth showed that 45.98% had weight between 1.5-2.5 kg, 28.57% weighed 2.5-4 kg, while 24.10% had weight <1.5 kg. Only 2% had weight > 4 kg.

DISCUSSION

In our survey, perinatal mortality rate was similar to other under developed countries.[5,6] These figures, are not strictly comparable with population-based data from England and Wales or Denmark and Sweden, but are indicative of large public sector hospitals in developing countries. The trend in perinatal mortality rate has been static over the last 35 years at KTH, due to low socioeconomic status, poverty, malnutrition and lack of antenatal care and a large burden of referred cases.[7,8] The high perinatal mortality rate shown here is a reflection of inadequacy and inaccessibility of maternity services of our country and the poor socio-economic status and cultural pattern of the population.

In our study there were 88.7% cases of PNM without any antenatal care. Aziz S reported impact of socioeconomic conditions on perinatal mortality.[9] Another study also related high perinatal mortality to poor socioeconomic status and cultural patterns.[10] Considering maternal age, most of our women were young between 21-30 years while Ibrahim SA, et al have reported that teenage mothers and mothers >34

Table 1: Frequency of deliveries and perinatal deaths

Variable	Number
Total number of deliveries	11260
Total number of still births	605
Total early neonatal deaths	135
Perinatal mortality rate	65.7

Table 2: Maternal demographic characteristics

Variable	Frequency (percentage)
Booked	88 (11.60%)
Un-booked	652 (88.39%)
Age in years	
<20	200 (27%)
21-30	448 (60.5%)
>30	92 (12.4%)
Parity	
Primiparae	175 (23.6%)
Para 1-5	375 (50.6%)
>5	190 (25.6%)
Gestational age in weeks	
24-31+6	318 (42.9%)
32-36+6	221 (29.8%)
>37	201 (27.1%)

Table: 3: Factors related to perinatal mortality

Factors	Number (percentage)
Anterpartum Hemorrhage	220 (29.7%)
Placenta pervia	80 (10.8%)
Abruptio placentae	140 (18.9%)
Hypertensive Disorders	198 (26.7 %)
Eclampsia	118 (15.9%)
Severe pre eclampsia	80 (10.8%)
Mechanical problems	108 (14.3%)
Obstructed labor	68 (9.1%)
Cord prolapse	15 (2.0%)
Ruptured uterus	10 (1.3%)
Teraservers lie	10 (1.3%)
Breech presentation	5 (0.67%)
Congenital anomalies	74 (10%)
Hydrocephaly	18 (2.4%)
Anencephaly	42 (5.6%)
Neural tube defects	4 (0.54%)
Multiple anomalies	10 (1.3%)
Sacrococcygeal	2 (0.27%)
Neonatal problems	64 (8.64%)
Meconium aspiration	42 (5.6%)
Respiratory distress syndrome	8 (0.01%)
Bleeding disorders	4 (0.54%)
Septicemia	10 (1.35%)
Unexplained deaths	42 (5.6%)
Maternal medical problems	34 (4.5%)
Diabetes	15 (2.02%)
Anemia	8 (0.01%)
Hepatitis	7 (0.94%)
Choreoamnionitis	4 (0.54%)

years of age have a twice higher risk of PND.[11] Preterm deliveries and low birth weight (<2.5kg) definitely carry a high risk of perinatal death as seen in our study and other surveys.[12] The commonest risk factor in this study was APH, similar to the study conducted at Quetta.[13] This is followed by hypertensive disorders of pregnancy, however, others have reported hypertensive disorders as the leading cause of PNM.[14]

Mechanical factors are the 3rd most frequent cause of PNM in our study. Prolonged and obstructed labor result in intrapartum death, birth asphyxia and meconium aspiration. Ruptured uterus result in fetal death in almost all cases. Neglected transverse lie, cord accidents and breech presentation also cause adverse perinatal outcome. A Ara reported 38% PNDs due to obstructed labor and 160/1,000 in another study[15].

Congenital defects have become major cause of perinatal mortality in developed countries resulting in more than 20% of PNM[16]. The highest rates of PNM recorded due to congenital anomalies for Ireland is 2.4/1000 and for Malta 2.6/1000.[17] Globally about 10% of neonatal deaths are due to congenital anomalies[18]. Our study revealed 14.4% PNDs due to congenital anomalies which is higher as compared to developed countries but comparable to the locally available data.[15]

Maternal diseases contributed in about 4.5% of neonatal deaths in our study. Maternal diabetes, anemia and hepatitis are mainly highlighted for perinatal death in this study. Maternal diabetes was responsible for 4.4% of PNDs in a study,[19] comparable to 2% of our study. Anemia is prevalent in 45% of pregnant population in our country and it is directly related to perinatal outcome.[21] In our study 0.01% PNDs were 1.2% due to maternal anemia which was 0.45% in other study.[10] It has been noted in one study that all the described pregnancies facing PNDS with severe growth restricted fetuses were complicated by significant co-morbidities e.g hypertension, systemic lupus erythromatosus or diabetes.[22]

A large majority of risk factors for perinatal deaths are preventable if detected earlier and treated properly. Simple measures like preconception folic acid supplementation can reduce the risk of neural tube defects, calcium supplement during pregnancy can reduce the risk for pre eclampsia, early recognition of raised blood pressure and its treatment to reduce the worsening situations like intra uterine growth restriction and intrauterine fetal death and preterm delivery. The social action and health care programs of Government of Pakistan has provided domiciliary maternal and new born care services through TBAs and community workers since 1997 to improve the primary health care services network. The study conducted by Jokhio AH, et al in 2005 reports that training the birth attendants was effective in reducing PNM.[23] Besides the limitations of the small sample size this study definitely gives an insight about the existing situation of maternal and perinatal health care.

CONCLUSION

Provision of safe motherhood services including antenatal care, clean and safe delivery, and emergency obstetric and neonatal care services at the door step of women will help in reducing the perinatal death.

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