

Pattern of Perinatal Mortality Among Deliveries at Holy Family Hospital Rawalpindi

Nabeela Waheed¹, Saira Ahmed², Khansa Iqbal³, Saadat Naqvi⁴

Associate Professor¹, Senior Registrar², Assistant Professor³, APWMO⁴

¹⁻⁴Department of Gynaecology and Obstetrics, Unit II, Holy Family Hospital, Rawalpindi,
(Rawalpindi Medical University, Rawalpindi)

Address of Correspondence: Associate Prof. Nabeela Waheed

Associate Professor, Department of Gynaecology and Obstetrics, Unit II, Holy Family Hospital, Rawalpindi

Email: nabeela_waheed@yahoo.com

Abstract

Objective: To determine the pattern of perinatal mortality and its related obstetric risk factors.

Methodology: It was a retrospective study carried out from January 2014 to December 2015. All patients delivered in Gynae Unit-II during the study period were included. These women were advised for follow up in OPD one week after delivery. The perinatal deaths including still births and early neonatal deaths (ENND) within 7 days of birth were taken into account. Those with less than 28 weeks of pregnancy were excluded. The data was collected from perinatal mortality excel worksheet, also gathering information of data like age, parity, period of gestation, complications during pregnancy, labor and mode of deliveries. Perinatal data included weight, reported gestational age, sex of baby, Apgar score at birth and possible causes of death.

Results: During the period of two years, 20,231 deliveries were conducted. There were 1373 perinatal deaths. 867 were still born while 506 died within seven days of birth. The overall perinatal mortality rate was 67.8/1000 total births and still birth rate 42.9/1000 total births. Main risk factors were mechanical in 21% cases followed by prematurity in 20.3% and hypertensive disorders in 18.8% cases. Antepartum haemorrhage was found in 11.8% while maternal infections / medical problems in 6.5%, congenital anomalies were found in 4.4% and neonatal problems in 15.3%.

Conclusion: Strong association of perinatal mortality was noted with lack of antenatal care, preterm gestational age and low birth weight. So, provision of good maternity services including antenatal, intrapartum care and emergency obstetric and neonatal care services at door step of women will help in reducing the perinatal death in developing countries.

Keywords: Early neonatal mortality rate, Perinatal mortality, stillbirth rate.

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Introduction

According to WHO the perinatal period commences at 22 completed weeks of gestation and ends seven completed days after birth. Our study period was from 28 weeks of gestation to first seven days after

birth because of limited neonatal care facilities available. Perinatal mortality is a sensitive indicator of the quality of services provided to pregnant women and their newborn. Audit of perinatal

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mortality 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 The countdown to 2015-decade report (2000-2010) had shown that child mortality rates have been declining across the globe. However, 49 out of 68 counts down countries were still off track for achieving the MDG4 (reduce child mortality to 2/3, by achieving a 4.4% annual rate of decline) primarily due to persistently high perinatal mortality in general and high neonatal mortality in particular.² Every year out of 5.3 million births in Pakistan 270,000 newborns die. Neonatal mortality rate of Pakistan is 62-81/1000 births³. Achieving MDG4 probably remained a dream in our part of the world. The proposed SDG target for child mortality aims to prevent deaths of newborn and children under five years of age. All countries aim to reduce neonatal mortality to at least as low as 12 deaths per 1000 live births.⁴

Risk factors for perinatal mortality are multiple. Several studies have shown a strong association of perinatal mortality with birth asphyxia, preterm delivery, neonatal infections, infections during pregnancy, maternal anemia, complications during pregnancy and labor.^{5,6,7,8} Our hospital being a tertiary level centre receives complicated cases from urban as well as rural areas of Punjab. As many births take place in domiciliary settings and are poorly reported especially stillbirths, reliable reports on perinatal mortality are lacking.⁹

Methodology

It was a retrospective study carried out from January 2014 to December 2015. All patients delivered in Gynae Unit-II during the study period were included. These women were advised for follow up in OPD one week after delivery. The perinatal deaths including still births and ENND within 7 days of birth were taken into account. Those with less than 28 weeks of pregnancy were excluded because of limited neonatal care facilities available. The data was collected from perinatal mortality worksheet, also gathering information of data like age, parity, period of gestation complications during pregnancy,

labor and mode of deliveries. Perinatal data included weight, reported gestational age, sex of baby, Apgar score at birth and possible causes of death. The records and case notes of patients who delivered their babies at the hospital were reviewed and information on the antenatal care, labor, perinatal outcome, as well as socio-demographic characteristics were extracted. The selected data was analyzed using EPI info 2000 software.

Results

During the period of two years, 20,231 deliveries were conducted. There were 1373 perinatal deaths. 867 were still born while 506 died within seven days of birth. Perinatal mortality rate in year 2014 was 64 and in 2015 was 71.

Table I: Frequency of deliveries and perinatal deaths

Variable	Number
Total number of deliveries	20231
Total number of still births	867
Total number early neonatal deaths	506
Perinatal mortality rate	67.8

The maternal demographic features are shown in Table II. One hundred and twenty-five (9.1%) of the deaths occurred among booked patients and 1248 (90.9%) in un-booked patients. The mean maternal age was 30.31 years, 773 (56.3%) deaths occurred in mothers between 21 to 30 years, 368 (26.8%) in 15-20 years age and 232 (16.9) % in age > 30 years. Three hundred and twenty-one (23.4%) perinatal deaths occurred in primigravidae and 890 (64.8%) in multipara (1-5) and 162 (11.8%) in grand multipara (>5). The majority of perinatal deaths were in preterm infants 1067 (77.7%) and 306 (22.3%) were of 37 weeks gestation or more. The birth weight distribution of the babies was comparable and 894 (65.1%) of the babies weighed less than 2.5 kg. The frequency of spontaneous vaginal delivery was 1049 (76.4%), 324 (23.6%) caesarean sections were performed. The overall perinatal mortality rate was 67.8/1000 total births and still birth rate 42.9/1000 total births. The risk factors for the perinatal loss are summarized in Table 3. Main risk factors were mechanical in 21% cases followed by prematurity in 20.3% and hypertensive disorders in 18.8% cases. Antepartum haemorrhage was found in 11.8% while

maternal infections / medical problems in 6.5%, congenital anomalies were found in 4.4% and neonatal problems in 15.3%.

Table II: Maternal Demographic Characteristics

Variable	Total	Percentage
Booked	125	9.1
Non Booked	1248	90.9
Age in years		
15-20 years	368	26.8
21-30 years	773	56.3
>30 years	232	16.9
Parity		
Primi-Para	321	23.4
Para 1-5	890	64.8
>5	162	11.8
Gestational age in weeks		
28-30 ⁺⁶	655	47.7
32-36 ⁺⁶	412	30.0
>37	306	22.3
Weight in Kg		
1 -1.5	306	22.3
1.6 – 2.5	588	42.8
2.6 – 4	401	29.2
>4	78	5.7
Mode of delivery		
SVD	1049	76.4
LSCS	324	23.6

Table III: Factors Related to Perinatal Mortality

Factors	Total	Percentage (%)
Congenital Anomalies	61	4.4
Hypertensive disorders		18.8
PIH	174	12.7
Eclampsia	84	6.1
APH		11.8
Abruptio placentae	138	10.1
Placenta previa	24	1.7
Mechanical		21.0
Obstructed / Prolonged Labor	48	3.6
Intra Uterine growth restriction	30	2.2
Cord prolapse	27	2.0
Meconium aspiration syndrome	46	3.4
Ruptured uterus	14	1.0
Transverse lie	26	1.9
Breech	46	3.4
Birth asphyxia	51	3.7
Maternal Medical Problems		6.5
Heart disease	14	1.0
Diabetes	39	2.8

Anemia	36	2.6
Neonatal Problems		15.3
RDS	67	4.9
Bleeding disorders	12	0.9
Septicemia	57	4.2
Bronchopneumonia	32	2.3
Cardiopulmonary arrest	42	3.1
Prematurity	279	20.3
Unexplained	25	1.8

Discussion

This study shows the perinatal mortality status at a tertiary referral hospital serving predominantly cases with abnormalities referred from the surrounding health institutions and from population of town. Not only is the overall PMR very high but the trend has shown plateauing rather than a decreasing trend.¹⁰

One possible reason for the non-decreasing trend is the increasing number of deliveries during the study period due to increasing health awareness and health seeking care at institution for pregnancy and delivery care as also noted by Asefa et al.¹

The PNM in unbooked cases was 90% which is consistent with pooled meta-analysis review article. Possible reasons were due to poor socio-economic status and cultural pattern as noted by Korejo R.⁵ The majority of perinatal deaths occurred among mothers who were 21-30 years of age as pointed in a study at Peshawar, while Ibrahim SA et al reported that teenage mothers and mothers > 34 years of age have twice high risk of PND.⁷ Sixty-four (64.8%) of our patients were of parity between 1-5 which is consistent with study at Jimma University Teaching Hospital. Seventy-seven (77.7%) of perinatal deaths were noted in newborn with gestational age of < 37 weeks.¹¹ Preterm deliveries and low birth weight (<2.5kg) definitely carry a high risk of perinatal deaths as seen in our study and other surveys.

The main primary obstetric causes of perinatal deaths were mechanical factors (21%) and prematurity (20.3%) followed by maternal hypertensive disorder (18.8%), neonatal problems (5.3%), APH (11.8%) maternal medical problems other than hypertension (6.5%), congenital anomalies (4.4%) which is more or less similar to the perinatal mortality rate study result review and the 10 years perinatal death review in Jimma Hospital¹. Mechanical factors leading to perinatal mortality rate were because of prolonged obstructed labour,

ruptured uterus, neglected transverse lie, cord accident and breech presentation leading to meconium aspiration and birth asphyxia. An Ara reported 38% perinatal deaths due to obstructed labour and 160/1,000 in another study.¹² This sub group of mortality is indicative of lack of or in adequacy of antenatal and intranatal care.

Hypertensive disorders of pregnancy accounts for 18.8% of perinatal deaths in our study which is consistent with study by Asefa D¹, while it is reported as leading cause of perinatal mortality in developing countries.¹³ Neonatal problems lead to 15.3% of perinatal deaths which is in accordance with study at Jinnah Hospital.⁵ This point indicates the need for improved hygienic conditions and improvement in maternal nutritional status and socio-economic conditions.

Maternal disease contributed to 6.5% of neonatal deaths in our study. Maternal diabetes, anemia and cardiac diseases are mainly highlighted for perinatal deaths.¹⁰

Congenital defects have become major cause of perinatal deaths in developed countries.¹⁴ Our study revealed 4.4% of perinatal deaths due to congenital anomalies with is lower as compared to developed world but comparable to the locally available date.¹⁵ This is because of prompt availability of good antenatal care and modern diagnostic facilities in developed world.

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 supplements during pregnancy can reduce risk for pre-eclampsia, early recognition of raised blood pressure and its treatment to reduce the worsening situation like IUGR, IUD and preterm delivery. The special health care programs of Government of Pakistan have provided domiciliary maternal and new born care services. Besides the small sample size this study gives an incite about the existing situation of maternal and perinatal health care. Few perinatal deaths may have been missed in women who were discharged with health babies and did not come for follow up.

Conclusion

Strong association of perinatal mortality was noted with lack of antenatal care, preterm gestational age and low birth weight. So, provision of good maternity services including antenatal, intrapartum care and emergency obstetric and neonatal care services at door step of women will help in reducing the perinatal death in developing countries.

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