

Perinatal Mortality: A Mirror Image of Maternal Health

Shahida Sheikh

Assoc. Prof. Obst. & Gynae Unit-II, Sheikh Zaid Women Hospital, Chandka Medical College Larkana

ABSTRACT

Objective: Perinatal mortality usually reflects health status of mother and is indicator of quality of care received by mother during her period of gravidness and fetus at birth. We carried out this study to evaluate the magnitude of perinatal mortality at our institute and its contributing factors

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at Obst. & Gynae Unit II and Unit of Pediatric Medicine, Chandka Medical College hospital Larkana from 1st January 2012 to 31st December 2012.

Materials and Methods: Women who delivered after 24 completed weeks were selected from labour room. Perinatal deaths including stillbirths and early neonatal deaths up to 7 days of life were studied. Outcome variables like maternal age, parity, communal standing and booking status were taken in to consideration. Complications arising during pregnancy or any medical illness, details of labour, fetal condition at birth were also noted.

Results: During the study period 4818 women delivered. There were 473 perinatal deaths with a perinatal mortality rate of 98/1,000 live births. Among these women only 9% were booked, while 91% un-booked. Perinatal death rate was more seen in maternal age group between 21-30 years that were 51%. Women having parity of 2-5 had highest perinatal mortality of about 44%. Gestational age from 31-36 weeks contributed about 46%. Most prevalent condition reportedly causing perinatal death was prolonged and obstructed labour which added 30% of total, followed by antepartum hemorrhage causing 18% of perinatal deaths, hypertensive disorders and other maternal medical diseases contributed about 15.5% and 6.5% respectively. 16% fetuses died of congenital anomalies. 11% neonatal septicemia seen. Unexplained still births seen in 9% of total.

Conclusion: Perinatal mortality is stagnantly high among mothers with poor health even having no access for antenatal, intra partum and postnatal care. Unfortunately they report to hospital when already had developed some complication. Awareness programs at community level, training health workers providing facilities at remote health centers can make the lot of difference.

Key Words: Perinatal mortality, Still birth, Early neonatal death.

INTRODUCTION

Perinatal mortality (PNM) is defined as the death of a fetus from 24 completed weeks of gestation up to first 7 days of life after birth. It embraces all intrauterine, intrapartum deaths, stillbirths and early neonatal deaths up to seven days of life.¹ PNM is the root to analyze the perinatal mortality rate which is extracted out of 1000 live births. Perinatal mortality is a universal problem leaving perinatal death number as high as 59 lacs throughout the world every year and among them 10 lacs babies had intrapartum deaths paralleling 11 deaths each minute.² This scenario is upsetting under developed countries more than developed part of world especially those in sub-Saharan Africa and south central Asia.³ Pakistan is a developing country where women are rarely coming for antenatal visits and even 68% births take place at home without realizing availability of resources required for diagnosing fetal compromise and for neonatal resuscitation.⁴ Truth is that most perinatal deaths in our society are not reported but roughly it has been estimated that in Pakistan every year about 5.3 million babies are born and sadly among them 5.09% (2,70,000) new borns die.⁵ 2013 report of international agency has ranked Pakistan on the top of countries having high still birth and neonatal death rate

which shows as 1 million babies die on first day of life and another 1.2 million are stillbirths.⁶ Reduction in these deaths necessitates the monetary, social and governmental drive to gadget widespread ingress to good class care during pregnancy, childbirth and neonatal period as death ratio is direct reflection of care provided to mother.² This is even possible with simple measures like from Pakistan, one cluster- randomized controlled trial of training of traditional birth attendants claimed 30% reduction in frequency of perinatal deaths just with 3 days training on basic ante and intrapartum care, clean safe delivery with disposable delivery kits and referring complicated cases for neonatal care⁷ with another study showing high institutional deliveries with maternal voucher scheme.⁸

Chandka medical college hospital is a tertiary care hospital of upper Sindh with wide catchment area up to borders of Baluchistan and Punjab. Doing this study was aimed to find out the frequency of perinatal deaths (PNDs), its causes or risk factors and to recognize avertible factors.

MATERIALS AND METHODS

It was an observational cross sectional study conducted from 1st January 2012 to 31st December 2012 at departments of Obstetrics and Paediatrics of Chandka

Medical College Larkana. All patients who delivered beyond 24 weeks of gestation were included in the study. Perinatal deaths involving still- births either fresh or macerated stillbirths were registered. Neonborns whichever died in obstetric ward or in the department of Pediatrics(referred from obstetric ward) up to seven days of life were listed in our study. Those with <24 weeks pregnancy were excluded. Age, parity, gestational age and social status of all mothers noted down. Mode of delivery, complications developing during pregnancy, any medical disorder causing problem to mother or fetus and other relevant factors were assessed. Fetuses explored for congenital anomaly as well. Ethical approval and clearance was obtained from Chandka Medical College Institutional Review Board (IRB).Informed consent obtained. Moreover, privacy and secrecy was assured by evaluating and circulating the findings in aggregate.

RESULTS

During the study period of one year from January to December 2012, there were 4818 deliveries. Among them 473 perinatal deaths occurred with a perinatal mortality rate of 98/1,000 live births. Looking at booking status of these women, just only 9% were booked. While 91% were un-booked. Perinatal death rate seen in maternal age group between 21-30 years was 51%. Multiparous women having parity of 2-5 had seen higher perinatal mortality 44% in this study. Fetuses group having gestational age from 31-36 weeks contributed about 46% also detailed in table 1.

Table No.I: Characteristics of maternal history

| Characteristics | Percentage |
|------------------------|------------|
| Un-booked | 91% |
| Booked | 9% |
| Age group | |
| 15-20 years | 11% |
| 21-30 years | 51% |
| 31-40 years | 21% |
| More than 40 years | 17% |
| Parity | |
| Para 0-1 | 23% |
| Para 2-5 | 44% |
| Para >5 | 33% |
| Gestational age | |
| 31-36 weeks | 46% |
| 24-30 weeks | 22% |
| 37-42 weeks | 32% |

Most prevalent condition reportedly causing perinatal death was in our setup prolonged and obstructed labour which added 30% of total, followed by antepartum hemorrhage causing 18% of perinatal deaths. Hypertensive disorders and other maternal medical diseases contributed about 15.5% and 6.5% respectively. 11% fetuses died of congenital anomalies.

9% neonatal septicemia seen. Unexplained still births seen in 10% of total also shown in table 2 with their mode of delivery. Fetal condition at birth whether stillborn or number of early neonatal deaths and perinatal mortality rate is elicited in table 3.

Table No.2: Obvious Causes of Fetal and Neonatal Death and their Mode of Delivery.

| Causes | Number | Percentage |
|------------------------------|--------|------------|
| Mechanical problems | 142 | 30% |
| Antepartum hemorrhage | 85 | 18% |
| Hypertensive disorders | 74 | 15.5% |
| Congenital anomalies | 52 | 11% |
| Unexplained deaths | 47 | 10% |
| Neonatal septicemia | 42 | 9% |
| Maternal medical problems | 31 | 6.5% |
| Type of delivery | | |
| Cesarean section | 227 | 48% |
| Assisted vaginal delivery | 86 | 18% |
| Spontaneous vaginal delivery | 160 | 34% |

Table No.3: Perinatal deaths rate in relation to total deliveries at CMCH

| Variable | Number |
|------------------------------|------------|
| Total number of deliveries | 4818 |
| Total number of still births | 378 |
| Total early neonatal deaths | 95 |
| Perinatal mortality rate | 98/1,000 |
| Still Birth rate | 79.9/1,000 |
| Early neonatal death rate | 20.1/1,000 |

DISCUSSION

Perinatal mortality is a sad event in mothers life, who after keeping baby for long nine months in womb, get nothing in her lap. In our study perinatal mortality rate (PNM) rate was 98/1,000, which is parallel to other studies .A study conducted in the city of Hyderabad Sindh province of Pakistan, having same social environment showed PNMR even greater than our study as 100/1000, ⁹while metropolitan city hospital shared almost same figures 97.2/1000 as we had in our setup.¹⁰We cannot compare our results with industrialized countries like England and wales where PNMR is very low ^{11, 12}

Pakistan being a developing country although many intervention are done but still it is having rate of perinatal mortality still high as 68-81/1,000 in connotation to other developing countries even of South Asia like India and Bangladesh.⁶

PNM is an indicator to weigh the worth of health care provision and is definitely affected by social, ethical, economical and scholastic values of areas, where mother is living. A huge figure of pregnant women unfortunately do not even turn for antenatal care rather they report to hospital once they have developed

obstetrical complications, which again is reason for high PNM rate. In our study there were 91.7% cases women were un booked of PNM without any antenatal care. This has been agreed internationally as elicited in study done in Nepal, where they found 16 times more perinatal mortality in group of women having no antenatal care.^{8,13} Another study done by pediatricians in Pakistan's biggest city also clearly mentioned effects of maternal status on perinatal mortality rate as neither these women are evaluated for any risk factor prenatally nor they have home delivery by skilled persons which results in undesirable fetal outcomes.¹⁴ Perinatal outcome may be adverse in extreme of ages, but in our study it was age group of 21-30 years, which was affected with poor perinatal ending because this age group takes high domestic responsibilities and does not pay heed to their own requirements. This finding is mirrored in other studies as well.^{9,15}

Although many studies are showing worsening perinatal outcome in grand multiparous mothers,^{16,17} women but we had the finding of adverse pregnancy outcome in women having parity between 2-5 and these multiparous women are over projected that they have previous experience of pregnancy and childbirth, so they may not develop complications. Our country where most people are living below poverty line sensitization is more needed to improve maternal health status subsequently decreasing PNMR. Same conditions are prevalent in African countries, so is reported in study done in far and deprived area.¹⁸

Larkana had to face natural disaster in 2010 with flood damaging properties of people so making them economically under privileged forcing them back to live in areas with limited resources and this has directly affected lives of pregnant women. We found in our study underutilization of obstetrical services in such poor women with financial and geographical constraints made them to report late at tertiary care hospital after long length of labour with the diagnosis of prolonged and obstructed labour which caused 30 % of intra and neonatal deaths of fetuses. Same type of scenario with increased perinatal mortality is shared by studies done by studies from Pakistan¹⁹, Bangladesh²⁰ and Ethiopia,¹⁸ while study done at Abbottabad Pakistan concluded abnormal labour as 3rd frequent cause of pnm where it was 18% perinatal mortality due to prolonged and obstructed labour.¹⁷

The association is, if those females who had perinatal fetal deaths due to mechanical factors like malpresentation and obstructed labor, were provided optimal intrapartum care, almost all babies could have been salvaged, and no mother should have developed rupture in unscarred uterus. Antepartum hemorrhage was second commonest cause of perinatal mortality in our setup that was 18% and nearly same has been conveyed in a study conducted by Indian author.²¹ Looking in to causes of still birth. This also reflects the

attitude of community. Had they utilized services of at least skilled birth attendants or lady health workers, most of babies would have been able to survive in this world as seen in figures quoted by Bhutta et al.²²

Hypertensive disorders of mothers ranged up to 15.5% as a causative agent for perinatal mortality in current study which may be below real figures as many of mothers get delivered then and there without knowing the cause and they just share in their history while facing same event in subsequent pregnancy, especially multiparous women also pronounced in literature.²³ Other medical disorders made their contribution up to 6.5% in our ward perinatal mortality which were quite treatable and avoidable conditions. Terrible thing is that people who have some problem during pregnancy don't seek treatment as they consider "pregnancy as an act of mother nature which should not be hindered" and regrettably this group had perinatal mortality three time more than general public.²⁴ Congenital birth defect have been seen up to 11% of perinatal deaths in our data and almost near to it 8% communicated by another South Asian study.²⁵

Noninvasive diagnostic tool ultrasound is very least used by people living in far side. Had they used fearlessly, frequency of stillborn at birth would have been decreased and information obtained from ultrasound would have given insight for prevention of congenital defects. Despite having postmortem of still babies in country like Norway, researchers were of opinion that one fourth of still births remain unexplained and same happened in our study though we did not go for postmortem in our setup but it can help identification of some identifiable causes.²⁶ Neonatal sepsis seen up to 9% in our circumstance, which is indication of unsupervised prolonged labour and manipulation by un trained attendants may not be comparable to other hospitals.¹⁷

CONCLUSION

We are about to enter in 2015, which was made as targeted year to achieve Millennium development goal (MDG 4 and 5) for reducing perinatal and maternal mortality. Though lots of agencies are doing their best to achieve the target but yet vigorous efforts to be taken to get optimum results. It requires sensitization of community, motivation and empowerment of mothers and folks to decide for exercising their right to have supervised preventive as well as emergency care in health facilities because of direct influence of maternal health on perinatal endings.

Ownership and partaking of stake holders in particular areas have reflected difference in the form of more institutional deliveries and subsequent improvement in fetomaternal outcome. Same should be practice everywhere. There is pressing need to expand infrastructure on the way to hospital, ambulance services and of course availability of trained and skilled

persons in nearest health facility to obtain successful outcomes.

REFERENCES

1. Neonatal and Perinatal Mortality Country, Regional and Global Estimates, whqlibdoc.who.int/publications/2006/9241563206_eng.pdf
2. Cloke B, Pasupathy D. Understanding perinatal mortality. *Obst, Gynaecol and Reprod Med* 2013; 11(23):323-330.
3. WHO. The world health report: make every mother and child count. Geneva 2005.
4. Unicef Basic Indicators. Pakistan Statistics. Available at: [www.Unicef.org/infobycountry / Pakistan_Pakistan_Statistics](http://www.Unicef.org/infobycountry/Pakistan_Pakistan_Statistics).
5. Ali N. State of the worlds new born. Save the Children - Pakistan. Available at [http:// www.savethechildren.org/publications/newborns_report.pdf](http://www.savethechildren.org/publications/newborns_report.pdf). Accessed on February 17, 2008.
6. Ending Newborn Deaths. Save the Children - Pakistan. Available at [http:// www.savethechildren.org/publications/newborns_report.pdf](http://www.savethechildren.org/publications/newborns_report.pdf). Accessed on September 15, 2014.
7. Jokhio AH, Winter HR, Cheng KK. Study Involving Traditional Birth Attendants and Perinatal and Maternal Mortality in Pakistan. *N Engl J Med* 2005; 352(20):2091-9.
8. Agha S. Impact of a maternal health voucher scheme on institutional delivery among low income women in Pakistan. *Reproductive Health* 2011 8:(10) accessed on <http://www.reproductive-health-journal.com/content/8/1/10>.
9. Yousfani S, Bibi S, Mumtaz F, Memon A. Perinatal mortality and related obstetric risk Factors at a tertiary care hospital of Hyderabad. *JLUMHS* 2008; 204-7.
10. Korejo R, Bhutta S, Khurshid J. An audit and trends of perinatal mortality at Jinnah Post-graduate Medical Centre Karachi. *J Pak Med Assoc* 2007; 57: 168-71.
11. Rao S, A kolekar R. Shah P, Badwar K, Vaidiya PR. Perinatal mortality - the wider perspective. *J Obstet Gynecol Ind* 2001; 51: 118-22.
12. Ngoc NTN, Meriardi M, Abdel Aleem H. Causes of stillbirths and early neonatal deaths: data from 7993 pregnancies in six developing countries. *Bull World Health Organ* 2006; 84: 1-12.
13. Tuladhar H, Dhakal. N Impact of antenatal care on maternal and perinatal outcome: study at Nepal Medical College Teaching Hospital NJOG 2011; 6 (2): 37-43.
14. Aziz S, Billoo AG, Samad NJ. Impact of socio-economic conditions on perinatal mortality in Karachi. *J Pak Med Assoc* 2001;51: 354-60.
15. Butt F, Razaq N. Perinatal mortality audit at Sharif Medical and Dental College, Lahore – Pakistan *Biomedica* 2012;(28):40-6.
16. Babinszki A, Kerenyi T, Torok O, Grazi V, Lapinski RH, Berkowitz RL. Perinatal outcome in grand and great – grand multiparity: Effects of parity on obstetric risk factors. *Am J Obstet Gynecol* 1999; 181: 669- 74.
17. Shamshad. Perinatal mortality: an outcome of quality of perinatal care. *Gomal J Med Sci* 2010;2 (8):166-71.
18. Bayou G, Berhan Y. Perinatal mortality and associated risk factors: a case control study *Ethiop J Health Sci* 2012; 3 (22):153-6.
19. Ara A. Outcome of Obstructed Labor. *J Postgrad Med Inst* 2004; 18: 512-7.
20. Lawn JE, Cousens S, Zupan J. 4 million neonatal deaths: when Where? Why? *Lancet Neonatal Survival Steering Team*. *Lancet* 2005; 365(9462): 891-900.
21. Vaishali KN, Pradeep G. Cases of still birth. *J Obstet Gynecol Ind* 2008;58(4):314-318.
22. Bhutta ZA, Memon ZA, Soofi S, Salat MS, Cousens S, Martines J. Implementing community-based perinatal care: results from a pilot study in rural Pakistan. *Bull World Health Organ* 2008; 86(6):452-9.
23. Ananth CV, Basso O. Impact of pregnancy-induced hypertension on stillbirth and neonatal mortality. *Epidemiol* 2010;11:118–13.
24. Kaunitz M, Spence C, Danilson T, Rochat R, Grimas D. Perinatal mortality in a religious group avoiding obstetric care. *American J Obstet Gynecol* 1984; 150: 826-30.
25. Saiyad SS, Jadav HR Study of Congenital Malformations In Central Nervous System & Gastro- Intestinal Tract. *National J of Med Res* 2012;2(2): 121-23.
26. Froen JF, Amestad M, Frey K, Vege A, Sangstad OD, Stray-Pedersen B. Risk factor for sudden intrauterine unexplained death: epidemiologic characteristics of singleton cases in Oslo, Norway, 1986 – 1995. *Am J Obstet Gynecol* 2001; 184: 694-702.

Address for Corresponding Author:

Dr. Shahida Shaikh

Banglow No.3, Type-A Professor Colony
Chandka Medical College, Larkana
Mobile No.: 0333-7543377