Original Article

Frequency of Stillbirths at MCH Centre FGPC Islamabad

Sadia Aziz[1], Moazzam Naseer[2], Shama Akhter[3], Raffia Shahid[4]

[1]Registrar Dept of Obs and Gynae, Federal Government Polyclinic Center (PGMI) Islamabad, [2]Assistant Professor, Riphah University, Islamabad, [3]Medical Officer, Dept of Obs and Gynae, Federal Government Polyclinic Center (PGMI) Islamabad, [3]Surgeon, Dept of Obs and Gynae, Federal Government Polyclinic Center (PGMI) Islamabad.

Correspondence: *Dr. Sadia Aziz*
Registrar Dept of Obs and Gynae, Federal Government Polyclinic Center (PGMI) Islamabad
dr.sadiaaziz@gmail.com

Abstract

Objective: To determine the frequency of stillbirth and analyze its causes at Mother and Child Health Center (MCH) at Federal Government Polyclinic (FGPC) Islamabad Pakistan.

Place and Duration: The data is collected from the year 2012 to 2016. This is a convenience sampling method in which every woman who had stillbirth was taken into consideration.

Methodology: This observational study was performed at Obstetrics & Gynaecology department of MCH Centre FGPC Islamabad. The gestational age was determined by ultrasound, and causes, feto-maternal characteristics were collected on predesigned proforma and analyzed using descriptive statistics.

The 109 pregnant women included in the study were residents of Islamabad these pregnant women were scheduled for delivery at the center at their due time if at all the delivery was expected normally. Stillbirth was defined as Infant born with no signs of life as breathing, crying or heartbeat. Stillbirths occurring after 24 completed weeks of gestation or more, or weighing at least 500 g, were included in the study.

Results: The stillbirth rate was 11.9/1000 births despite 100% of women receiving prenatal care, all attended by skilled providers in hospital and 35% cesarean section rate. 19.3% of stillbirths occurred ≥ 37 weeks and 26% from 33-36 weeks. 24.8% had congenital anomalies. Preeclampsia (14.7%) and APH (14.7%) were also associated with increased stillbirth rate.

Conclusions: In our country with limited health resources it is vital to record and maintain stillbirth data so that it can be properly utilized to prevent and to find out exact etiology of stillbirths. There should be a special focus on preconceptionally and antenatal care. As most of the stillbirths were late preterm, with congenital anomalies PE and APH, suggesting that many Pakistani stillbirths may be preventable with higher quality obstetric care.

Keywords: Stillbirth, Preeclampsia. APH, Congenital abnormalities, Preconceptionally Care, Antenatal Care

Cite this article as: Aziz S, Naseer M, Akhter S, Shahid R. Frequency of Stillbirths at MCH Centre FGPC Islamabad. J. Soc. Obstet. Gynaecol. Pak. 2018; Vol 8(1):9-14.

Introduction

Stillbirth is defined by WHO as “the death of a fetus with a gestational age of at least 28 weeks or with a birth weight of 1000 g or more.” Worldwide, over 2 million stillbirths were recorded in the year 2015, with 7178 deaths per day. More than 95% occurred in developing countries. The frequency of stillbirth is related to socioeconomic status and geographical distribution of population.[1] In the US it is 5 per 1000live births, while in developing countries it is 30 to 40/1000 births. The greatest burden lies in South Asia with 25-40/1000births. In South Asia and sub-Saharan Africa, approximately 75% of the stillbirths

Authorship Contribution: [1,2] Concept, Interpretation, [2]Data Analysis & Drafting , [2,3] Data collection, literature search and help in references, copy editing, [4]Reviewed the study.

Funding Source: none
Conflict of Interest: none

Received: July 17, 2017
Accepted: Feb 7, 2018

occurred and more than half occurred in rural families from these areas. In sub-Saharan Africa, stillbirth rate is nearly 10 times that of developed countries (29 vs. 3 per 1000 births). There is a similar trend of maternal mortality in areas lacking skilled birth attendants.[2]

In the Sustainable Development Goal 3, the world community should advocate policies to reduce stillbirths, as reported rates of perinatal mortality are alarming.[3]

Recent data depicts that Pakistan has the highest stillbirths rate in the world (43/1000 live births).[4] This lack of proper, statistical and empirical investigations, research and intervention have made stillbirth a major problem in Pakistan. The main hurdle for access to health care facility among Pakistani women is poverty, low literacy rate, and gender biases.[5]

In Pakistan stillbirth ranges from 36/1000 in some rural areas according to WHO it is 70/1000. Between 2000-2015 stillbirth rate is reduced by nearly 20% worldwide, making an annual rate of reduction(ARR) 2% 22/1000.[2,6,7,8]

The major reason for the difference in stillbirth rate is under-reporting and lack of registries. Another reason of discrepancy in stillbirth rates is a different lower limit of birthweight and gestational age in various countries. The fetal and neonatal survival is dependent on the complications during pregnancy and labor.[9] The intrapartum period is a most high risk of stillbirths. In developed countries, only 10% deaths occurred in an intrapartum period in contrast to 59% in developing the world. Mainly due to lack of access to a health facility and inadequate care lack of birth attendants at delivery.[10,11]

Other causes of stillbirth in underdeveloped countries are congenital anomalies, hypertensive disorders, GDM when poorly managed, IUGR and APH[11].As populations-based studies are not conducted so prevalence and exact etiology of stillbirth are unknown in these countries. Thus, the aim of our study is to determine stillbirth rate, main causes and gestational age at stillbirth. Hence in the future policymakers can be convinced to allocate resources towards policies of averting the stillbirths.

Methodology

This study was conducted at MCH center FGPC Islamabad, Capital of Pakistan, from January 2012 to December 2016. The primary cause of stillbirth was assigned by using Aberdeen Classification. The primary cause of death is defined as the obstetric antecedent factor or event that initiated the process or sequence of events leading to the death of the fetus. This type of system, which also helps to classify, enables recognition of the following primary causes, as per standard characterization and descriptions as discussed in Aberdeen Classifications “intrapartum asphyxia, spontaneous preterm labor, antepartum hemorrhage, intrapartum infections, intrauterine growth retardation, hypertension, fetal abnormality, maternal disease, trauma and unexplained intrauterine death”. For each stillbirth, the causes were characterized as per the set standards.

Main Outcome measure: The main objective and purpose of this longitudinal study was to investigate the various causes of stillbirths in women who attended the MCH during five years. The causes of still births are versatile and vary from personal to person hence it was difficult to determine and statistically less reliable to quote without empirical investigation. The investigation was conducted and the inferences are withdrawn keeping in view the standard criteria and procedures.

The other information we obtained were as following; fetal birth weight, fetal gestational age from the last menstrual period/earliest scan, mode of delivery and fetal sex. Stillbirth rates were expressed as the number of fetal deaths per 1000 births (i.e. live or dead). We compared the stillbirth rate in each year between 2012 and 2016. SPSS version 22 was used to calculate frequencies of different causes and for graphical representation of the data.

Results

A retrospective case series of singleton stillbirths from 2012-2016 was conducted at Federal Government Polyclinic Gynae Unit 3 Islamabad. Stillbirth was defined as WHO as a death of a baby before or during birth, from the 28th week of pregnancy onwards, or a birth weight of 1000 gram or more if gestational age is unknown. A total of 109 singleton stillbirths were identified in a total 9109 births, a rate of 11.9 per 1000 singleton births. There was a gradual increase in annual stillbirth rate

at MCH from 2012 to 2015 (8.77/1000 to 13.84/1000 births), then rate of stillbirths declined in 2016 at MCH up to 9.66/1000 singleton stillbirth.

Regarding the causes in decreasing order of frequency, Congenital anomalies (24.8%) and unexplained stillbirths (23.85%) remained as major causes; preeclampsia (14.7%) and APH (14.7%) were also identified as an increasingly important cause, oligohydramnios/anhydramnios and PPROM 4.6%, polyhydramnios 3.7% women reported absent/reduced fetal movement 2.8%, domestic violence and cord around neck 1.8%, GDM and acute gastroenteritis 0.9%.56.9% were multigravida and 29.4% were Primigravidas(Table IV).Termination of pregnancy after 20 weeks due to IUD or fetal anomalies was found to be the cause of rising stillbirth rate at our institution. Mean birth weight of babies was 2.20kg, SD (±1.052) Table III). 100% women were booked cases, among them 12.8% had LSCS(Table I).19.3% occurred at more than 37 weeks with male gender preponderance 48% (Table II, IV). Local and national data collection on stillbirth should be standardized and should include differentiation of termination of pregnancy as a separate entity so as to accurately assess stillbirth to target appropriate research and resource allocation.

Table I: Mode of delivery in women

MOD	Frequency	Percentage
Spontaneous expulsion	15	13.8
Svd	8	7.3
Lscs	14	12.8
AVBD	4	3.7
Unknown	32	29.4

Table II: Fetal Characteristics

Fetal Sex	Frequency	Percentage
Male	48	44
Female	41	37
Ambigous Genitalia	1	.9
Unknown	19	17.4

Table III: Different weights of stillborn babies

Fetal Weight	Frequency	Percentage
Less than 1 kg	31	28.4
1-2 kg	41	37.6
2.1-3 kg	25	22.9
3.1-4 kg	8	7.3
Unknown	4	3.7

Table IV: Frequency of stillbirths at different gestational age

Gestational age	Frequency	Percentage
Less than 28 weeks	28	25.7
28-32 weeks	25	22.9
33-36 weeks	28	25.7
37-42 weeks	21	19.3
Unknown	7	6.4

Table V: Maternal Characteristics associated with stillbirth

Parity	Frequency of stillbirth	Percentage
Primigravida	32	29.4
Multigravida	62	56.9
Grandmultipara	3	2.8
Parity Unknown	12	11

Discussion

This study had advantages and as well as shortcomings. The advantage consists of the inclusion of women from a particular region and an effort to find out specific causes of stillbirths. Shortcomings include the small number of stillbirths and lack of autopsies, histopathological examination and karyotyping for exact diagnosis of stillbirth.

In this study, the highest stillbirth rate (13 per 1000 deliveries) was observed during the year 2014& 2015, in women, of which 62% were multigravida, all booked and delivered at the hospital by a doctor, with a 14% cesarean section rate. Nearly 25% of the stillbirths were between 33-36 weeks of gestation and another 19% were at term (37-42 wks.). A population-based study found out that hypertensive disorder in pregnancy caused an increase in stillbirth 1.4 times as compared to normotensive women .Shaheen S et al reported in review study, that hypertension caused 9.6% of stillbirth and Yousfani et al reported 23.2%.[13-16] As prenatal care is below standard in the developing world, congenital anomalies are one of the leading causes of stillbirth. Korejo R et al and Khaskheli M et al described in their study that the congenital anomalies caused stillbirth from 6.2% to 16% respectively. Hossain N et al and Ghazi A et al described 4% and 33% stillbirth rate due to congenital abnormalities[17,18,19,20]. In our study, congenital anomalies (24.8%) among the stillbirths, showed lack of awareness among women about folic acid intake and deficient preconceptional care .19 % of stillbirth were without any diagnosis.

Preeclampsia and APH caused almost 15% stillbirths. Lawn et al implicates that these deaths could be eluded with better emergency obstetric care and quick obstetric complications management.[12] Hence, the results of this study propose that regardless of antenatal booking, regular visits and delivery at the hospital and higher cesarean section rates, there is a possibility that preconception and first trimester care to the women is deficient [21,22,23]. Our study also indicates that documentation of stillbirth and finding the exact cause of stillbirth by autopsy lacks significantly in Pakistani health facilities. There is no proper reporting system or registry of stillbirth in the whole region. We thus suggest that improving preconception and early pregnancy care, food fortification by folic acid will reduce the stillbirths due to congenital anomalies and other pregnancy complications in women with access to antenatal care.

In developed countries, antenatal stillbirths are observed commonly and are macerated. In this study, most of the stillbirths frequently were fresh. A study showed stillbirth rate of 47/1000 in rural areas of Pakistan, documenting 75% were fresh. [24] These studies depict, dissimilarities in gestational age and causes of stillbirths between developed and developing countries.[25]

In the US, half of the stillbirths occur at less than 28 weeks and more than three quarter is preterm.[14] In our study, all the gestational ages were assessed by LMP and ultrasound. So19.3% were term and 25.7% were late preterm depicting that the gestational age at stillbirths in Pakistan varies from developed nations.

With an autopsy and histological examination of the placenta, the cause of stillbirths is still unidentified [27]. In this study, these investigational and diagnostic tools were inaccessible and the cause of death was mainly declared and reported based on stillbirth proforma with no sophisticated methods. Furthermore, in these stillbirths, GDM and acute GE were minimally significant causes while congenital anomalies, preeclampsia, antepartum hemorrhage were significant, while one quarter were unknown.

At our health facility in Pakistan, stillbirths are a 1.1% of total births. The risk factors are somewhat related to other regions of world. Because mainly stillbirths had congenital anomalies PE, APH and unknown causes, this study recommends that stillbirths can be averted with proper obstetric care. Despite being part of developing country, our setup provides adequate prenatal care, skilled birth attendants, and a high cesarean section rates seen in both the overall and stillbirth population. We need significant quality to substantially reduce stillbirth rate. For example, the interventions used in many developed countries to identify women at risk for stillbirth, including fundal height measurements and third trimester ultrasound to search for fetal growth retardation, routine screening for diabetes, congenital infections and fetal kick counts and non-stress testing to identify fetuses at risk of dying, are rarely used in Pakistan and were not in routine use in MCH center during the course of this study. In high income countries, the first step to format applicable interventions to decrease adverse outcomes is the analysis of perinatal death, in which each death is inspected for cause and preventability. As medical resources are accessible to reduce the stillbirth rate. To better define the causes of stillbirth, it is necessary to analyse the perinatal death to find out which stillbirths can be prevented. So that interventions and resources can be used to improve perinatal outcomes. It is usually observed that there is dearth of proper monitoring for women who are at risk for stillbirth, e.g. women with growth restriction, hypertension, diabetes, and hemorrhage, and inability to perform cesarean sections of women who are at risk of fetal death.

Overall stillbirth has multiple negative impacts such as psycho-social reverberations for the grieving family, social segregation and economic burden of this phenomenon on family and hospital management. Hence, keeping in view political economy aspect, attention must be given to stillbirths and poverty reducing policies . Women's empowerment has a significant positive impact upon her choice of acquiring reproductive health services. Furthermore, more funds should be allocated for prenatal care. Regional and national birth registers provides data and verification to help policy makers for resource allocation[28,29,30,31]. Hence, plausible statistics facilitates health department to consider stillbirths as an important issue.[32,33] For comprehension of etiology of stillbirth's long-term research methods are beneficial for surveillance.

Stillbirth lacks arbitration and appraisal by health sector due to unregistered deaths[34,35]. The well-designed surveillance system for data recording of perinatal and maternal mortality is required along with technical expertise to improve and utilize the available data. It should be mandatory to register all the births at every hospital /maternity home including details on vital status, gestational age, and birthweight[13].

Conclusion

In conclusion, with high stillbirth's rate in Pakistan, the quality of care should be improved to screen women at risk for stillbirth. With vision 2025, there is a hope that as the Sustainable Development Goal (SDG) programme may give attention to stillbirths. The quality of care can be improved by regular ward-based training assessments.

References

1. Murguía-Peniche T, Illescas-Zárate D, Chico-Barba G, A Bhutta Z.An ecological study of stillbirths in Mexico from 2000 to 2013. Bulletin of the World Health Organization. 2016;94:322-330A
2. Jehan I,M McClure E,Salat S,Rizvi S, Pasha O et al. Stillbirths in an Urban Community in Pakistan. Am J Obstet Gynaecol. 2007; 197(3):257e1-257e8
3. United Nations. Transforming our world: The 2030 agenda for sustainable development. New York: 2015.
4. Planning Commission. Pakistan 2025-One nation-One vision. Ministry of Planning, Development & Reform, Government of Pakistan. Islamabad: 2015
5. Nasrullah M, Bhatti JA. Gender inequalities and poor health outcomes in Pakistan: A need of priority for the national health research agenda. J Coll Physicians Surg Pak 2012; 22(5):273–4.
6. Lawn JE, Shibuya K, Stein C. No cry at birth: global estimates of intrapartum stillbirth and intrapartum-related neonatal deaths. Bull World Health Organ. 2005; 83:409–17.
7. Jokhio A, Winter HR, Cheng KK. An intervention involving traditional birth attendants and perinatal and maternal mortality in Pakistan. N Engl J Med. 2005; 352(20):2091–9.
8. Fikree FF, Gray RH. Demographic survey of the level and determinants of perinatal mortality in Karachi, Pakistan. Paediatr Perinat Epidemiol. 1996; 10:86–96.
9. Cousens S, Blencowe H, Stanton C, Chou D, Ahmed S, Steinhardt L, et al. National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. Lancet 2011;377(9774):1319–30.
10. Kiely JL, Paneth N, Susser M. Fetal death during labor: an epidemiologic indicator of level of obstetric care. Am J Obstet Gynecol. 1985:721–6.
11. Ronsmans C, Etard JF, Walraven G, Hoj L, Dumont A, de Bernis L, Kodio B. Maternal mortality and access to obstetric services in West Africa. Trop Med Int Health. 2003;8(10):940–8.
12. McClure EM, Nalubamba-Phiri M, Goldenberg RL. Stillbirth in developing countries. Int J Gynaecol Obstet. 2006;94:82–90.
13. Tikmani SS, Zahid N. Rate and Risk Factors of Stillbirth in Pakistan: A Systematic Review. J Pediatr Child Nutr .2016;2 (3): 100116 (sbart2)
14. Ananth CV, Basso O (2010) Impact of pregnancy-induced hypertension on stillbirth and neonatal mortality in first and higher order births: a population-based study. Epidemiology 21: 118-11123.
15. Shaheen S, Akhtar S. Causes of intrauterine fetal death. Journal of Postgraduate Medical Institute (PeshawarPakistan).2011; 20: 239
16. Yousfani S, Bibi S, Mumtaz F, Memon A, Khushk IA, et al. Perinatal mortality and related obstetric risk factors at a tertiary care hospital in Hyderabad. JLUMHS.2008; 7: 204-207.(sb art2)
17. Hossain N, Khan N, Khan NH (2009) Obstetric causes of stillbirth at low socioeconomic settings. J Pak Med Assoc. 59: 744-747.
18. Ghazi A, Ali T, Jabbar S, Siddiq NM, Lata S, et al. (2009) Perinatal mortality contributors in singleton gestation. J Coll Physicians Surg Pak 19: 711-713.
19. Khaskheli M, Baloch S, Khushk IA, Shah SS (2007) Pattern of fetal deaths at a university hospital of Sindh. J Ayub Med Coll Abbottabad 19: 32-34.
20. Pauli RM, Reiser CA. Wisconsin Stillbirth Service Program: II. Analysis of diagnoses and diagnostic categories in the first 1,000 referrals. Am J Med Genet.1994; 50: 135-153.
21. Fenton P, Whitty CJM, Reynolds F. Caesarean section in Malawi: prospective study of early maternal and perinatal mortality. BMJ. 2003;327:587–91.
22. Ali M, Hotta M, Kuroiwa, Ushijima H. Emergency obstetric care in Pakistan: Potential for reduced maternal mortality through improved basic EmOC facilities, services, and access. Int J Gynaecol Obstet. 2005;91:105–112.
23. Fikree FF, Mir MA, Haq IU. She may reach a facility but will still die! An analysis of quality of public sector maternal health services, District Multan, Pakistan. J Pak Med Assoc. 2006;56:156–63.
24. Bhutta ZA, Memon Z, Zaidi S, Billoo AG, Hyder AA. Global Forum for Health Research. 2002. Etiology of perinatal and neonatal death in a rural population of Pakistan: A Verbal Autopsy Preliminary Report.
25. Silver RM, Varner MW, Reddy U, Goldenberg RL, Pinar H, Conway D, et al. Work-up of stillbirth: A review of the evidence. Amer J Obstet Gynecol. 2007;196:433–44.
26. Goldenberg RL, Koski JF, Boyd BW, Cutter GR, Nelson KG. Fetal deaths in Alabama 1974 to 1983: a birth weight-specific analysis. Obstet Gynecol. 1987;70:831–5.
27. 27.Goldenberg RL, McClure EM, Bann CM. The relationship of intrapartum and antepartum stillbirth rates to measures of obstetric care in developed and developing

countries Acta Obstet Gynecol Scand 2007;86(11):1303-9.
28. Ma N, Hou X. Empowering women: The effect of women's decision-making power on reproductive health services uptake: Evidence from Pakistan. World Bank: 2011.
29. Bhutta ZA, Yakoob MY, Lawn JE, Rizvi A, Friberg IK, Weissman E, et al. Stillbirths: what difference can we make and at what cost? Lancet. 2011;377(9776):1523–38
30. Goldenberg RL, McClure EM, Bhutta ZA, Belizán JM, Reddy UM, Rubens CE, et al. Stillbirths: the vision for 2020. Lancet. 2011;377(9779):1798–805.
31. Tasneem Shaikh B, Hafeez A, Hamid S. stillbirths: what can be done to confront an invisible public health problem in pakistan? J Ayub Med Coll Abbottabad. 2017;29(1): 165-9.
32. Frøen JF, Friberg IK, Lawn JE, Bhutta ZA, Pattinson RC, Allanson ER, et al. Stillbirths: progress and unfinished business. Lancet 2016;387(10018):574–86.
33. Hamid S, Malik AU, Richard F. Stillbirth--a neglected priority: understanding its social meaning in Pakistan. J Pak Med Assoc. 2014;64(3):331–3.
34. Mustufa MA, Kulsoom S, Sameen I, Moorani KN, Memon AA, Korejo R. Frequency of stillbirths in a tertiary care hospital, Karachi. Pak J Med Sci. 2016;32(1):91–4.
35. Negandhi PH, Neogi SB, Chopra S, Phogat A, Sahota R, Gupta R, et al. Improving reporting of infant deaths, maternal deaths and stillbirths in Haryana, India. Bull World Health Organ. 2016;94(5):370–5