STILL BIRTHS IN A TERTIARY CARE HOSPITAL OF BHOPAL: A CROSS SECTIONAL STUDY

Ritesh Rawat¹, Manju Toppo², D. K. Pal³

HOW TO CITE THIS ARTICLE:

Ritesh Rawat, Manju Toppo, D. K. Pal. "Still births in a Tertiary Care Hospital of Bhopal: A Cross Sectional Study". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 05, January 15; Page: 767-772, DOI: 10.14260/jemds/2015/111

ABSTRACT: BACKGROUND: Death of fetus in – utero is both devastating to the couple and of concern to the clinician. Stillbirth is one of the most common adverse out-come of pregnancy. **OBJECTIVE:** 1.To study the status of still birth in Sultania Zanana Hospital. 2. To find out the causes and risk factors associated with still birth. **MATERIAL AND METHODS:** A cross –sectional study was carried out at SZ Hospital Bhopal during 1st August 2011 to 31st July 2012. A predesigned and pretested profarma was used to collect information from the mothers who had stillbirth regarding maternal age, parity, antenatal care, obstetric causes and medical conditions. Analysis was done using proportions and chi-square test. **RESULT:** There were a total of 10662 deliveries with 473 still births giving a still birth rate of 44.3/1000 total births. Women who had still births 88.73% were in the age group 20-34yrs, 45.66% were nullipara.53.06% had not taken any antenatal care. The major causes were APH 128 (27.06%), PIH (Preeclampsia, eclampsia) 114 (24.1%) and maternal medical conditions 34 (7.1%) of stillbirths. Majority 293 (61.94%) were ante partum stillbirths. **CONCLUSION:** Study showed a high rate of stillbirth, the major causes were ante partum hemorrhage, pregnancy induced hypertension and maternal medical conditions. **KEYWORDS:** Stillbirth, Antenatal care, Ante partum hemorrhage, Pregnancy induced hypertension.

INTRODUCTION: Still birth is both a medical and lay term for a fetus that is born dead. WHO estimates that worldwide 3.3 million stillbirths occur each year, accounting for over half of all perinatal deaths, the majority of these take place in developing countries.^[1]

ICD-10 recommends the use of the following definition of fetal death; death of a fetus weighing at least 1000 gm occurring after 28 completed weeks of gestation or at having at least 35 cm body length.^[2]

In India, the SRS estimates for year 2007 for the whole country is about 9 per 1000 total births. Madhya Pradesh has a stillbirth rate of 8 with rural area having a rate of 6 and urban area having a higher still birth rate of 16 per 1000 total births. And having third highest rank in peri-natal mortality of 46% in the country.^[3]

Despite an important indicator still births are invisible in global policy and programme priorities. They are usually not captured in local data collecting system. Lack of well-defined programme agenda, coupled with the lack of data, and social invisibility, deter action and investment for stillbirth prevention & reduction. Being cognizant of the distribution of still births (fresh & macerated) may help to detect shortcomings in the quality of antenatal and obstetric care given to the pregnant women. Data on the frequency & distribution of these adverse birth outcomes are important for planning maternal and child health services.^[1]

Hence this study is an attempt to put forward these factors to the forefront.

ORIGINAL ARTICLE

MATERIAL & METHODS: A predesigned and pretested proforma was used to collect information about demographic factors like maternal age, parity, antenatal care visit and obstetric complications which included hypertensive pregnancy disorder, ante partum hemorrhage, obstructed labor and severe anemia and also included maternal medical conditions from the mothers who had stillbirth at SZ Hospital. Simultaneously additional information of the particular delivered mother was gathered from the clinical case files & discussed with the appropriate attending physician within 48 hours of the occurrence of each stillbirth to fill any potential gaps in the clinical history. Thus data was collected to record the stillbirths that had occurred over the previous 24 hours daily. Data was tabulated in Microsoft Excel sheet and analyzed using the Epi- info software version 7 and appropriate statistical tests were applied.

Sl. No.	Age	Still Birth No. (%)	Live birth No. (%)	Total Birth No. (%)
1	<20	18(3.8)	53(0.52)	71(0.66)
2	20-34	417(88.73)	10053(98.6)	10470(98.1)
3	≥ 35	38(8.03)	83(0.81)	121(1.13)
	Total	473(100)	10189(100)	10662(100)

TABLE 1: DISTRIBUTION OF WOMEN WHO HAD STILL BIRTH AND LIVE BIRTH ACCORDING TO THEIR AGE

The chi-square statistic is 285.9248. The P-Value is < 0.00001. The result is significant at p < 0.05.

Sl. no.	Parity	Still births No. (%)	Live birth No. (%)	Total Birth No. (%)
1	Nullipara	216(45.66)	4282(42.02)	4498 (42.1)
2	1-3	165(34.88)	5446(53.44)	5611(52.8)
3	≥4	92(19.4)	461(4.52)	553(5.1)
	Total	473(100)	10189(100)	10662(100)

TABLE 2: DISTRIBUTION OF WOMEN WHO HAD STILL BIRTH AND LIVE BIRTH ACCORDING TO THEIR PARITY

The chi-square statistic is 225.1799. The P-Value is < 0.00001. The result is significant at p < 0.05.

ORIGINAL ARTICLE

Sl. No.	ANC received by mother	Still birth	Live birth	Total birth	Still birth rate
1	Yes	222(46.94)	7419(72.8)	7641(71.7)	29.05
2	No	251(53.06)	2770(27.2)	3021(28.3)	83.1
	Total	473	10189	10662	44.3

TABLE 3: DISTRIBUTION OF WOMEN WHO HAD STILL BIRTH ACCORDING TO ANC RECEIVED BY MOTHER

The chi-square statistic is 149.0862. The P-Value is < 0.00001. The result is significant at $p < 0.05$.

Sl. No.	Causes of death	Total	Ante partum	Intra partum
1	Pregnancy induced hypertensive disease	128(27.06)	114	14
2	Ante partum Hemorrhage	128(27.06)	128	0
3	Infections(malaria, syphilis, HIV)	22(4.6)	15	7
4	Severe anemia	55(11.6)	42	13
5	Maternal medical illnesses (Diabetes, cardiac ds., Liver ds.)	37(7.8)	34	3
6	Hydramnios (oligo/poly)	30(6.3)	24	6
7	Obstructed labor	29(6.2)	0	29
8	Rupture uterus	15(3.17)	0	15
9	Cord prolapsed	15(3.17)	0	15
10	Transverse lie with hand prolapsed	21(4.4)	0	21
11	Congenital anomaly	15(3.17)	11	4
12	Rh -ve pregnancy	7(1.4)	2	5
13	Unexplained	96(20.1)	22	74
	Total	473	293(61.94)	180(38.05)

TABLE 4: DISTRIBUTION OF CAUSES OF STILLBIRTHS AMONGST WOMEN WHO HAD STILL BIRTH: ANTEPARTUM AND INTRAPARTUM

RESULTS: There were a total of 10,662 deliveries out of which 473 stillbirths occurred during the 12 months study period, giving the stillbirth rate of 44.3 per 1,000 total births for a period of one year. Most of the still births in our study were fresh (83.9%).

Majority of women who had still births i.e. 88.73% were between 20-34yrs old, 3.8% belonged to the age group below 20 yrs. Only 8.03% belonged to age group above 35 years (table- 1). Advanced maternal age also remains an independent risk factor for still birth. Parity wise distribution showed 45.66% were nullipara (Table- 2).

ORIGINAL ARTICLE

Antenatal care amongst respondents revealed that almost 50% women i.e.53.06% had not taken any antenatal care which was significant. (Table -3).

About 293 (61.94%) were classified as ante partum and 180 (38.05%) were intra partum respectively. Amongst the ante partum factors APH accounted for max no. of cases 128(27.06%), followed by PIH (Preeclampsia, eclampsia) 114 (24.1%) and maternal medical conditions 34 (7.1%). Amongst intra partum factors obstructed labor accounted max. 6.2%, rupture uterus 3.1%, cord prolapse 3.1% other causes like infections, severe anemia, hydramnios, congenital anomaly were present in both ante partum and intra partum period. Amongst all still births 20.01% were unexplained. (Table- 4).

DISCUSSION: In present study there were a total of 10,662 deliveries out of which 473 stillbirths occurred during the study period, giving the stillbirth rate of 44.3 per 1,000 total births for a period of one year. Santhana krishnan BR et al observed in their study that the peri-natal mortality was 89.5 per 1000 births, the contribution to this from stillbirths being 43.8 per 1000 births which was similar to the our hospital based stillbirth rate.^[4] The reported stillbirth rate in the current study is higher than hospital based study by S.K. Kapoor et al who in their case-control study at a secondary level hospital at Ballabgarh, Haryana, found the still birth rate as 19.5 per 1000 births.^[5]

As per the findings of our study majority of women who had still births (88.73%) were in the age group 20-34yrs, followed by 8.03% were in age group above 35 years and only 3.8% in age group below 20 yrs. This could be explained by the fact that this age group (20-34) forms the majority of the mothers delivered in SZ Hospital. Imtiaz JEHAN et al in their community based prospective cohort study in Latifabad (Pakistan) observed similar pattern of presentation as of our study, that majority of mothers 81% were in the age group 20-34 yrs, followed by 17 % who were older than 35 yrs and only 2% below 20 yrs.^[6] Salihi HM, et al showed that advanced maternal age has been found to be associated with adverse pregnancy outcome.^[7] Advanced maternal age also remains an independent risk factor for still birth. In other study JT Muthir et al observed that the stillbirth rate was 81.6 per 1000 birth among mothers below 20 yrs of age, followed by those 40 yrs and above (73/1000 births). The lowest stillbirth rate of 32.1 per 1000 births was found among mothers in the age group 20-29 yrs.(chi-square= 29.4 ; $p < 0.0003$), but our study 8.03% belong to above 35 years age group^[8], so these findings not match with our study findings

Parity wise distribution showed 45.66% were nullipara which was highly significant ($p < 0.0001$). Nazli Hossain et al,in their case control study observed that both nulliparity and grand multiparity were significantly associated with stillbirths ($p < 0.003$ and $p < 0.009$ respectively).^[9]

53.06% mothers with still births had no antenatal care as compared with 27.2% of women who had live birth during the study period. The still birth rate among women with no antenatal care was 83.1 compared with 29.05 among women receiving antenatal care. Usha shah et al had similar finding.^[10] Imtiaz JEHAN et al in their study observed that 95% of all women received at least one antenatal care visit, while in our study it was about 47 % ; 72 % of the live births received more than 4 visits compared to 69% of women with a stillbirth.^[6] C.U. Iklaki et al. in their study showed that stillbirth was statistically significant ($\chi^2 = 27.096$; $p < 0.05$) among unbooked teenagers than booked.^[11]

In present study 83.9% were fresh stillbirths. JT Muthir et al in their study observed, that 74(46.8%) of the stillbirths were fresh, while 84 (53.2%) were macerated stillbirths.^[8] Abdou Jameh

ORIGINAL ARTICLE

et al showed in their study that out of 237 stillbirths 137 (57.8%) were fresh stillbirth.^[12] This indicates that most of the deaths probably occurred during labor, Fresh stillbirths are often used as proxy for stillbirths due to acute intra partum insult.

Ngoc NT et al in their study observed that in a large WHO trial, involving seven developing countries, hypertensive disorders of pregnancy were responsible for 28% of stillbirths, following Prematurity as the most common cause of stillbirth.^[13] D. V. Mavalankar, C. R. Trivedi et al reported in their study that vaginal bleeding during pregnancy were also associated with significantly ($p < 0.05$) increased risks of stillbirth and early neonatal death.^[14] Nazli Hossain et al in their case control study found that from the binary logistic regression analysis, obstetric factors which were significantly associated with stillbirth were obstructed labor (OR 16.2, CI 5.5-47), hypertensive disorders (OR 9.6 CI 4-23), abruption- placentae (OR 136, CI 52-356), placenta-previa (OR 71, CI 21-230), and preterm labor (OR 15 CI 4-54).^[9]

CONCLUSION: Our findings suggest that the still birth rate is high in S.Z. Hospital, Bhopal. The high stillbirth rate attributed to the fact that the study was conducted in tertiary health centre, the major causes were pregnancy induced hypertension, APH (abruptio placentae), and maternal medical conditions. The major identified risk factors were lack of antenatal care and multiparity. The causes of about 1/5th of stillbirths could not be ascertained. As most of the stillbirths were fresh, improved intra partum care supported by emergency transport services and skilled personnel could positively impact on such birth outcomes.

Good antenatal care converts in to healthy intra-natal period. Most of the causes of stillbirth are preventable so better screening and management are the effective intervention to reduce stillbirths. Stillbirth audit should be established.

ACKNOWLEDGEMENT: I sincerely acknowledge our Professor and HOD Dr D.K.Pal his support in preparing this article. I also sincerely thank Dr Manju Toppo for her encouragement while preparing this article.

REFERENCES:

1. Lawn JE, Cousens S, Darmstadt GL, Paul V, Martines J. Why are 4 million newborn babies dying every year? *Lancet* 2004; 364: 399-400. [PubMed:15288723].
2. International statistical classification of diseases and related health problems, 10th version. 2nd edition. Geneva: World Health Organization; 2005.
3. Govt. of India (2008) SRS Bulletin, statistical report 2007, Report no. 2 of 2008. Ministry of home affairs New Delhi. <http://www.censusindia.gov.in>
4. Santhanakrishnan BR, Gopal S, Jayam S. Perinatal Mortality Rate in a Referral Teaching Hospital in Madras City. *Indian J Pediatr* 1986; 58: 359-363.
5. Kapoor S.K., K. Anand and Guresh Kumar; Risk factors for stillbirths in A Secondary Level Hospital at Ballgarh, Haryana: A case control study; *Indian J Pediatr* 1994; 61: 161-166.
6. Imtiaz JEHAN, Elizabeth, Sohail, Sameera Rizvi, Omrana Pasha, Hillary Harris, Nancy Moss, R.L. Goldenberg ; Stillbirth in an urban community in Pakistan ; *Am J Obstet Gynecol*. 2007 September ; 197 (3): 257. e8.

ORIGINAL ARTICLE

7. Salihu HM, Wilson RE, Alio AP, Kirby RS. Advanced maternal age and risk of antepartum and intrapartum stillbirth. J Obstet Gynaecol Res 2008; 34: 843-50.
8. JT Muthir, PO Eka, Stillbirths at the Jos University Teaching hospital: Incidence, risk, and etiological factors; <http://njonline.com>, June 2011.
9. Nazli Hossain, Nusrat H Khan, Nazeer Khan Obstetric causes of stillbirth at low socioeconomic settings; Department of Obstetrics & Gynecology Unit 3, Civil Hospital & Dow University of Health Sciences, Karachi, Pakistan. JPMA 59: 744; 2009.
10. Usha Shah, A K Pratinidhi, PV Bhatlawande; Perinatal mortality in rural India: a strategy for reduction through primary care. I Stillbirth; Department of PSM, B J Medical College, Pune, Maharashtra, India; Journal of Epidemiology and Community Health, 1984, 38, 134-137.
11. C. U. Iklaki, J. U. Inaku, J. E. Ekabua, E. I. Ekanem, and A. E. Udo, Perinatal Outcome in Unbooked Teenage Pregnancies in the University of Calabar Teaching Hospital, Calabar, Nigeria. Department of Obstetrics and Gynaecology, University of Calabar, PMB 1115, Calabar, Nigeria, Dec 2011.
12. Abdou Jammeh, Siri Vangen, Johanne Sunby; Stillbirths in rural hospitals in the Gambia: A cross-sectional retrospective study; Obstetrics and Gynaecology International volume 2010, article ID 186867.
13. Ngoc NT, Merialdi M, Abdel-Aleem H, Carroli G, Purwar M, Zavaleta N, et al. Causes of stillbirths and early neonatal deaths: data from 7993 pregnancies in six developing countries. Bull World Health Organ 2006; 84: 699-705.
14. D. V. Mavalankar, 1 C.R. Trivedi, 2 & R.H. Gray 3 Levels and risk factors for perinatal mortality in Ahmedabad, India.

AUTHORS:

1. Ritesh Rawat
2. Manju Toppo
3. D. K. Pal

PARTICULARS OF CONTRIBUTORS:

1. Post PG Student, Department of Community Medicine, Gandhi Medical College, Bhopal.
2. Associate Professor, Department of Community Medicine, Gandhi Medical College, Bhopal.
3. Professor & HOD, Department of Community Medicine, Gandhi Medical College, Bhopal.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Ritesh Rawat,
Flat No. 6,
Shalimar Lake Ridge Apartment,
PNB Colony, Idgah Hills,
Bhopal, Madhya Pradesh.
E-mail: drriteshrawat@gmail.com

Date of Submission: 29/12/2014.
Date of Peer Review: 30/12/2014.
Date of Acceptance: 06/01/2015.
Date of Publishing: 13/01/2015.