

Original Article

STILLBIRTHS AND ITS CAUSES IN A TERTIARY CARE TEACHING HOSPITAL OF WEST BENGAL

Amitava Pal,¹ Debobroto Roy,¹ Rupali Modak²✉

ABSTRACT

Objective: To evaluate stillbirth rate and obstetric risk factors and its trend in a referral hospital.

Methods: A hospital based retrospective analysis of stillbirths was done in all pregnant women admitted in the antenatal ward over the years of 2016 and 2017 in Burdwan Medical College and Hospital. Changing trends of stillbirth rates and associated risk factors were assessed.

Results: The overall stillbirth rate in the present study is 25 per 1000 total births. Incidence of macerated stillbirth was high (70.39%). The present study also noted the overall stillbirth rate below 2500 gm was 36% (336/929). Severe prematurity contributed 9% of stillbirths and other factors responsible for fetal salvage are maternal diseases (11%), intrapartum asphyxia (17%), preeclampsia and eclampsia (11.12%).

Conclusion: Poor antenatal check-up, lower socioeconomic status were the major contributing factors for stillbirths which can be reduced by proper antenatal care, judicious and early referral of high risk cases and good obstetric care during delivery.

Key words: stillbirth rate, stillbirth ratio, antenatal care

INTRODUCTION

Stillbirth and early neonatal death pose a major problem in the developing countries. It varies widely in various geographic locations. Each year more than 3.3 million stillbirths are reported worldwide and a vast majority (98%) takes place in developing countries.¹ In developing countries improper reporting is a common problem.² Stillbirth rate is 5 per 1000 or less in the US and other developed countries, while the stillbirth rates of 30-40 per thousand of live births are common in developing countries and in

India the stillbirth rate varies from place to place and from urban to rural areas. Complications during pregnancy are associated with high stillbirth rate in developing countries.^{3,4} It is an important indicator of the quality of antenatal services in a community. Hence critical analysis of every stillbirth will go a long way in reducing its incidence over a period.

The objectives of our study were to analyze the stillbirth rate and find out factors associated with it through a retrospective hospital based study.

1. Dept. Obstetrics & Gynaecology, Burdwan Medical College, Burdwan, West Bengal
2. ✉ Dept Obstetrics & Gynaecology, R. G. Kar Medical College, 12/3J, Northern Avenue, Kolkata 700037.
Email: amitava.628@rediffmail.com

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MATERIALS AND METHODS

The hospital based retrospective study was undertaken from data received from January, 2016 to September, 2017 (21 months) in the department of Obstetrics & Gynaecology, Burdwan Medical College, Burdwan. Data were taken from hospital records of admission and delivery of pregnant mothers. A total of 38,955 maternity admissions were recorded in the maternity department during the last 21 months and of these 4.58 % (1786/38955) were not delivered during the study period. All stillbirths with gestational age of ≥ 28 weeks and birth weight of more than 1000 gms were included in the study. The out come was measured in terms of stillbirth rate calculated as late fetal death (≥ 28 weeks) in a year divided by live births plus stillbirths multiplied by 1000. The stillbirth ratio as the late fetal death divided by live births multiplied by 100. Stillbirths taking place in the intrapartum period are generally normal in appearance and are, therefore, regarded as fresh stillbirths whereas when the skin is not intact or macerated, it implies that death has taken place anything beyond 12-24 hours before delivery.

Different demographic variables like age in years, parity, residence and obstetric factors like status of admission (booked/not booked or referred), mode of delivery, birth weight and factors associated with stillbirths were analyzed. Gestational age was calculated from history, obstetrical examination and supported by ultrasonography.

The data were analyzed using Epi Info (version 3.32). Descriptive analysis was performed and odds ratio with 95% confidence interval was calculated for the retrospectively identified variables associated with stillbirths. A p-value less than 0.05 is designated as statistically significant.

RESULTS

Table 1 demonstrates the total deliveries in the year 2016 were 21330 of which 557 were stillbirths. The stillbirth rate was highest during the span of July-September (27.08 per 1000 births). Seventy percent of total stillbirths were macerated in nature. The total deliveries and stillbirths from January to September in the year 2017 was 15879 and 372 respectively. The stillbirth rate was higher (26.34 per 1000 births) in the first 3 months of the year, 2017.

Table 1. Quarter-wise distribution of stillbirths of December, 2016 and January to September, 2017

Details	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Total
Year- 2016					
Total births	4680	5029	5612	6009	21330
Live births	4554	4905	5460	5854	20773
Intrauterine fetal death	95	100	118	134	447 (80)
Intrapartum stillbirths	31	24	34	21	110 (20)
Stillbirth ratio (%)	2.76	2.53	2.78	2.64	
Still birth rate (per 1000 birth)	26.92	24.66	27.08	25.79	
Year 2017					
Total births	4669	5104	6106	NA*	15879
Live births	4546	4988	5973		15507
Intrauterine fetal death	102	92	101		295 (79)
Intrapartum stillbirths	21	24	32		77 (21)
Stillbirth ratio (%)	2.71	2.33	2.23		
Still birth rate (per 1000 birth)	26.34	22.73	21.78		

* NA: not available

Table 2. Labor and delivery (January 2016 to September 2017)

Characteristics	Total birth n (%)	Still births n (%)	OR (95% CI)	p value
Total enrolled	37,209	929 (2.50)		
		Macerated: 654 (70.39)		
		Fresh: 275 (29.61)		
Mode of delivery				
Vaginal	21776 (58.52)	732 (3.36)	2.63 (2.24-3.10)	0.0001
Forceps	992 (2.67)	20 (2.02)	0.80 (0.50-1.28)	0.3364
Cesarean section	13070 (35.13)	130 (0.99)	0.30 (0.25-0.36)	0.0001
Assisted breech	1371 (3.68)	47 (3.43)	1.39 (1.02-1.89)	0.2872
Type of birth				
Multiple	708 (1.90)	29 (4.10)	1.66 (1.12-2.45)	0.0076
Singleton	36501 (98.10)	900 (2.47)	0.60 (0.41-0.89)	0.0076
Birth weight				
<2500gm	7527 (20.23)	336 (4.46)	2.23 (1.95-2.57)	0.0001
>2500 gm	29682 (79.77)	593 (1.99)	0.45 (0.39-0.51)	0.0001

OR: odds ratio, CI: Confidence interval

Table 2 depicts assisted breech delivery (OR 1.39, CI: 1.02-1.89), cesarean section (35.13 percent of total birth of which 1% were still birth), multiple births (OR 1.66, CI: 1.12-2.45, $p=0.0076$) and birth weight >2500 gm (80 % of total births of which 1.99% were stillbirths). Fresh stillbirth was found in 29.61 % of cases.

Table 3 Obstetric factors associated with stillbirths

Factors	n (%)
Antepartum hemorrhage	72 (8)
PIH and eclampsia	100 (11.12)
Intrapartum asphyxia	153 (17)
Congenital fetal anomalies	9 (1.0)
Gross Prematurity	81 (9)
Maternal diseases	99 (11.0)
Cord prolapse	10 (1.1)
Post dated	144 (16)
Unexplained	152 (16.89)
Maternal Infection	80 (8.89)
Total	900

Obstetric complications were noted in 900 cases of total stillborn fetuses. The stillbirths were noted commonly with antepartum hemorrhage (8%), intrapartum asphyxia (17%), and maternal diseases (11%). One hundred and fifty two fetal deaths (16.89%) were classified as unexplained deaths and majority of those (59.21%, 90/152) were macerated (Table 3).

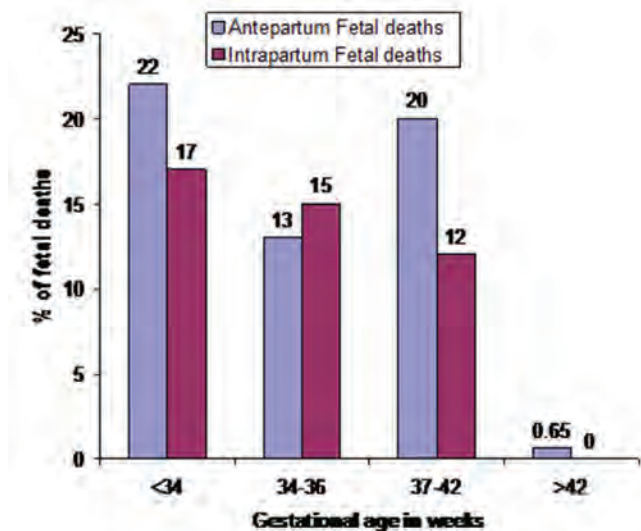


Fig. 1: Gestational age of the antepartum and intrapartum fetal deaths (n=929)

Fig. 1 Shows 20 percent of antepartum and 12 % of intrapartum fetal deaths were at term.

Sixty seven percent (622/929) were preterm (<37 weeks), post maturity was associated in 0.65 % of the stillbirths and all the deaths occurred in the antepartum period.

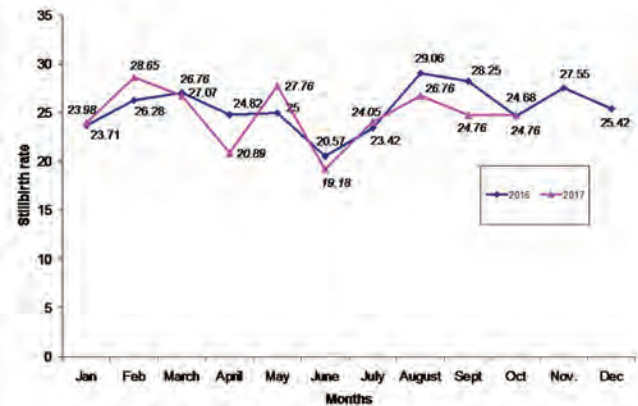


Fig. 2: Month-wise trends of stillbirth rate in the year 2016 and 2017

Fig. 2 shows that the stillbirth rate was comparatively lower in the months of April (20.89), June (19.18), August (26.76) and September (24.76) in the year 2017 as opposed to the corresponding months of the previous year.

DISCUSSION

Stillbirth rate is a painful experience to both mother and obstetrician. It is an indicator of both quality of antenatal service and delivery care of a country. The overall stillbirth rate in the studied period is 25 per 1000 total births. This figure is lower to 35.1/1000 births as reported by Kameshwaran et al⁴ and higher than 23.⁴ per 1000 births studied by Nayak and Dalal.⁵ The probable reasons of high stillbirth rates in our study is due to the fact that it is a referral hospital which serves rural populations with large catchments areas and caters a lot of districts, subdivisions and rural hospitals of west Bengal and Jharkhand. The present study showed that 39% of stillbirths were below 34 weeks. Our study is comparable with the study of Shrestha and Yadav⁶ who noted 40% of stillbirths occurred below 34 weeks of gestation. The present study also noted the stillbirth rate below 2500 gm was 36 % (336/929) which is also comparable with the findings (41%) of Jammeh et al.⁷ Most of the delivery in our study was vaginal (59%), which was associated with stillbirth in 3.36% of cases. The association of stillbirth with cesarean section was low (1%). Intrapartum monitoring with partography and timely cesarean section can reduce the intrapartum fetal death during labor. The present study also noted that severe prematurity contributed 9% of stillbirths and other factors responsible for fetal salvage are maternal diseases (11%), intrapartum asphyxia (17%), Preeclampsia and eclampsia (11%) and unexplained (17%) [Table 3]. Korde-Nayek and Gaikwad⁸ in a hospital based study showed the commonly associated factors for stillbirths are

antepartum hemorrhage (23.95%), medical disorders (20.8%), asphyxia (8.4%) and prematurity (8.4%) and unexplained (18.8%). Jehan et al⁹ reported 63% of fresh still birth in their report whereas it was thirty percent in our study.

CONCLUSION

The stillbirth rate in our analysis is high. This is an apex level rural based teaching hospital that caters to a very large geographical area. Poor antenatal care, lower socioeconomic status of the women, under nutrition and late or no referral, to our opinion, are the major contributory factors responsible for a large number of stillbirths. A significant number of stillbirths are preventable by adopting the following means: adequate and dedicated antenatal check-up by trained health care providers, timely identification of high risk factors and referral to the nearest higher center, having essential obstetric services including cesarean section by trained obstetricians. Strict clinical observation, including CTG monitoring during first stage of labor and application of partography are very essential components in monitoring of labor. Periodic facility audit, perinatal

mortality & morbidity meetings involving all stakeholders and personal supervision by the Head of the Department (O&G) would certainly reduce the stillbirth rate substantially.

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