



'THOSE WE CARRIED BUT NEVER HELD'-A REVIEW OF CAUSES OF STILLBIRTH AT TERTIARY CARE CENTRE.

Obstetrics & Gynecology

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ABSTRACT

Background: In order to reduce perinatal mortality, better understanding of aetiology of antepartum still births is very essential. Stillbirth rate according to the future years will be decided and UNICEF's goal of 'making every baby count' can be achieved only if; contributing factors of stillbirth are reviewed and assessed

Aim: To estimate the incidence, factors related and delays responsible for still birth at tertiary care center.

Method: A prospective observational study was conducted in Government medical college and hospital, Aurangabad from 2018 to 2020 after Institution Ethics Committee approval. Data of 1211 still birth cases were analysed and also classified as per CODAC classification system.

Results: The incidence of still birth was found to be 3.09 %. As per CODAC classification, Intrapartum factors were observed in 13.21% cases, maternal factors in 40.21%, fetal factors in 26.34% and placental factors in 18.66%, cord related in 4.38% and unexplained factors in 11.72% of cases.

Conclusion: In addition to disorders during pregnancy, low socioeconomic condition, poor referral services and suboptimal intrapartum care in referring facilities responsible for majority of still births which could have been prevented. We speculate that upgrading the existing health system performance, particularly high quality intrapartum care by skilled health personnel, will reduce stillbirths substantially.

KEYWORDS

WHO, CODAC, still birth

INTRODUCTION

The term stillbirth refers to delivery of a fetus after 20 weeks of gestational age, weighing 500 g or more with newborn baby showing no signs of life after delivery¹.

Antepartum stillbirths are a major contributor to perinatal mortality. In order to reduce the perinatal mortality, reduction of stillbirths is necessary and for this, better understanding of etiology of antepartum stillbirths is important².

India had the highest number of stillbirths and neonatal deaths in the world in 2015, says a study published in the Lancet³. According to Sample Registration System (SRS) 2016 still birth rate in India is 4 per 1000 live births in India⁴. Half of all stillbirths occur during labor and birth, could be prevented with improved quality of care⁵

National and regional estimates of numbers and causes of deaths are useful but they do not tell the whole story, therefore there is need of identifying individual cases, to find out what needs to be done so as to prevent similar deaths in future.

Stillbirth though a biomedical problem, is a significant psycho-social phenomenon that has potential to change the life of a family. As a part of comprehensive obstetric services and respectful maternity care, we undertook this study to give a better outcome in future pregnancy. As a primary reason to study the dead is to get information to save the living.

AIMS AND OBJECTIVES

- Estimating the incidence of stillbirth at tertiary care center
- To study sociodemographic factors related to and responsible for stillbirth

- To identify the main diseases and condition in mother that causes stillbirth
- To study and classify causes of stillbirth
- To identify delays resulting in stillbirth

METHODS

A prospective observational study was conducted after Institution Ethics Committee permission in Department of OBGY, GMCH Aurangabad, from September 2018 to September 2020, among 1211 women coming for antenatal check-up, who were fitting into inclusion criteria and who gave their consent for participation.

INCLUSION CRITERIA:

All PNC mothers delivered in labour room of Government Medical College & Hospital, Aurangabad who are willing to participate in the study.

PNC mothers who have a baby born with no signs of life weighing >500 gm and after 20 weeks of complete gestation.

EXCLUSION CRITERIA:

Mothers who have still born baby delivered outside Tertiary Care Centre premises and those who are not willing to participate in study. Stillbirth associated with maternal mortality were not considered as a part of this study

Cause of death: using CODAC system of classification;

- Intrapartum
- Maternal
- Fetal
- Placental

- Cord
- Others

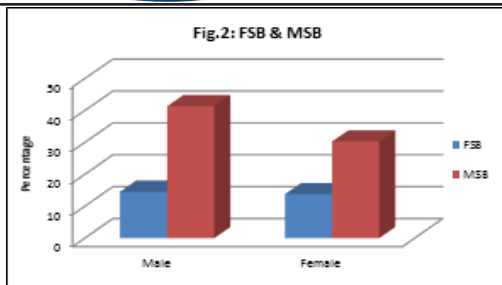
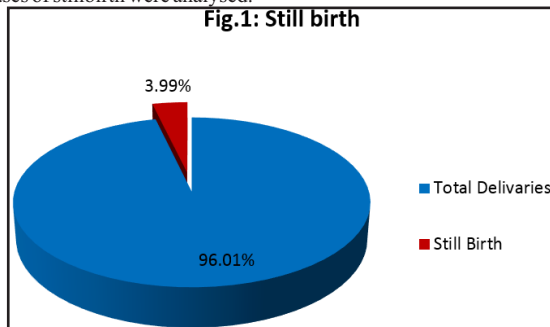
Critical Delay

Each and every case of stillbirth will be classified according to the mode of delay in one of the three delays as per the "three delays" protocol commonly used in maternal mortality cases. Once patient was enrolled after taking necessary consent, the patient was thoroughly interviewed, examined and investigated by the investigator. Detailed history of illness and thorough general and systemic examination findings were recorded. Data regarding onset of labour, mode of induction, mode of delivery, IUD (FSB or MSB) was recorded. Postpartum Complications were noted by examining the participants. The data regarding stillbirth was completed with the information on sex, weight, cause of death, critical delay, modifiable factors etc.

On analysis of data, observations were noted and results were formulated. Quantitative data presented in the forms of frequency and percentage.

RESULTS AND DISCUSSION

A total 31695 women delivered in the study period, out of which 1211 cases of stillbirth were analysed.



Stillbirth rate amongst total birth was 3.99% out of which, (343)1.082% were FSBs and 2.74% (868) were MSBs. 3.99% stillbirth but in pie diagram remainder should be 96.01%

Majority of still births were male babies 677 (55.91%) as compared to female babies 534 (44.09%). (fig 2)

Table 1: Distribution according to Baseline Characteristics (n=1211)

Characteristics	Frequency	Percentage
Age in Years	18-24	33.20
	>24-29	44.37
	>29-34	16.35
	>34-39	05.86
	>39	00.25
Booking Status	Unbooked	60.28
	Booked	39.71
Residence	Urban	40.21
	Rural	59.79
Socio-economic Status	Upper Class	00.25
	UMC	05.12
	LMC	56.32
	ULC	26.34
	Lower Class	11.97
Educational Status	Primary	48.14
	Middle	22.95
	High	14.95
	Graduate	13.95
Parity	Primi	42.28

	P ₂ -P ₄	614	50.70
	>P ₄	85	07.02

*Socioeconomic status is according to Modified Kuppuswamy Scale.

Majority of cases (44.34%) were in the age group of 24-29 years. The mean age was found to be 24.15 ± 4.35. Majority of stillbirths (60.28%) were in unbooked cases. It was observed that 60% mothers belonged to rural areas and 56.32% mothers belonged to lower middle-class family. Most of the women were having primary education i.e. 583 (48.14%). In this study, majority cases were primipara 42.28%. {Table 1}.

Table 2: Maternal Risk Factors

Maternal Risk factors	Frequency	Percentage	
HDP	274	22.63	
IUGR	219	18.08	
Anemia	226	18.67	
PROM	132	10.90	
APH	125	10.32	
Infection	70	05.78	
DM	Diet	20	02.64
	Insulin +Diet	12	
Preterm labour	158	13.04	
Multiple pregnancy	64	05.28	
Domestic violence	18	01.40	
Thyroid disorder	230	18.99	
Oligohydramnios	96	7.92	
Obesity (BMI)			
25-29.9	145	11.97	
> 30	157	12.96	

The majority of still birth cases (22.63 %) were associated with Hypertensive disorder of pregnancy. Other observed maternal risk factor were thyroid disorder in 18.99%, anaemia in 18.67%, IUGR in 18.08%, PROM in 10.90%, APH in 10.3% and Oligohydramnios in 7.92%. {Table 2}.

Table 3: Maternal & Fetal outcome (n=1211)

Characteristics	Frequency	Percentage
Maternal Outcome		
GA at time of delivery	≤ 28	23.29
	28-32	16.35
	32-37	25.52
	37-40	30.47
	≥ 40	04.13
Vaginal deliveries	Preterm	56.60
	Full term	29.81
	Instrumental	00.58
LSCS	Preterm	08.75
	Full term	04.22
Fetal Outcome		
Sex of Baby	Male	55.91
	Female	44.09
Birth weight	500- 1000	23.86
	1001-1500	14.53
	1501-2000	18.99
	2001-2500	10.10
	2501-3000	26.01
	>3001	06.46

Among all the cases, 60.12% cases were above 32 weeks of gestation and 39.64% of cases were below 28 weeks of gestation. Majority of still birth babies (87.03 %) delivered vaginally and 12.97% required caesarean section. Majority of mothers who underwent caesarean section had history of previous LSCS with impending scar dehiscence, abruptio placentae with unfavourable cervix. Around 61.56% of stillborn babies weighed more than 1500gm. {Table 3}.

Table 4: Classification of still birth cases according to CODAC system

CAUSES	FREQUENCY	PERCENTAGE
Intrapartum factors	160	13.21
Fetal distress	118	09.74
Obstructed and prolonged labour	27	02.23

Malpresentation	15	01.24
Antepartum factors		
Maternal factors	606	50.04
Hypertension	274	22.63
Infection	70	05.78
Thyroid disorders	230	18.99
Diabetes	32	02.64
Fetal factors	319	26.34
Birth defect	129	10.65
Prematurity**	158	13.04
Hydrops of unknown origin	29	02.39
Isoimmunization	03	00.25
Placental factors	226	18.66
Abuptio	119	09.82
Previa	06	00.50
Insufficiency	101	08.34
Cord factors	53	04.38
Loop round the neck	32	02.64
Prolapse	19	01.57
Knot	02	00.17
Unknown/Unexplained	142	11.72

There is increasing evidence that stillbirth though a global pandemic is potentially preventable and stillbirth rates are starting to be recognized as an important indicator of the quality of care⁸. A suitable classification system is central to any effort to reduce its incidence. In present study we used CODAC system (causes of death and associated conditions classification) to classify still birth.

As per CODAC classification, it was noted Intrapartum factor was seen in 13.21%, Maternal factor in 50.04%, Fetal factor in 26.34%, Placental factor in 18.66%, Cord factor in 4.38% and unknown/unexplained factor in 11.72% of cases. {Table4}.

Table 5: Critical Delay

Critical delay	Frequency	Percentage
Delay 1	756	62.42
Delay 2	408	33.69
Delay 3	6	0.49

The most common delay associated with still birth was observed to be type 1 delay in 62.42% i.e. delay in decision to seek care followed by delay 2 in 33.69% and delay 3 in 6 (0.49%). {Table5} Out of these 6 cases one was of undiagnosed cord presentation resulting in cord prolapse, one case of complete breech resulting in cord prolapse, one case delivered vaginally had evidence of 3 loops of cord around neck, two cases of scar dehiscence and a remaining case is of uterine rupture resulting in still birth.

DISCUSSION

Stillbirth is one of the major problems of the decade; UNICEF has launched a worldwide intervention under the initiative 'making every baby count'. We undertake this research of studying the causes of stillbirth at the grassroot level in a tertiary care center with heavy workload. The highlight of current study is collection of data from GMCH Aurangabad a tertiary care center situated in heart of Maharashtra. Series of realted events that led to stillbirth, helped the investigators in their perceptions ,regarding factors and ciumstances that contribute to and culminate in stillbirth.

Major categories that emerged from observation of mothers were: lack of prior identification of an appropriate health-care facility for delivery; timely transportation to a health-care facility for delivery; lack of timely and adequate management after reaching the health-care facility; and use of medication during labour. In the quantitative part of study, the factors that emerged as significant risk factors for stillbirths included history of previous stillbirths, complications during labour.

The incidence of still birth in our study was found 39.86 per 1000. In a study by DK Bhati⁹ reported that In India, the stillbirth rates (SBR) varied from 20 to 66 per 1,000 total births in different States. In study by Singh. N. et. al.¹⁰ incidence was observed to be 40%.

In present study 39.7% of mothers were booked & 60.28 % were unbooked. These findings was comparable to study by Devi KS. et. al.¹¹ and NFHS 3 study. In the present study sex of still birth babies most of them were males i.e. 56% and females were 44%. According to present

study the data regarding stillborn babies revealed that 56% were males and 44% were females. Male to female ratio was 1.27:1. The findings are comparable with other studies Kothiyal S. et. al¹² and Singh N. et. al.¹⁰.

According to CODAC classification most common factor associated with still birth was maternal hypertensive disorder of pregnancy (22.63%) being followed by thyroid disorder (18.99%) and anemia (18.67%). These findings were consistent with other studies such as Kothiyal S. et. al.¹² and Sharma B. et. al.¹³. Variability of findings observed were due to different cohort, size of samples and different settings. In present study the most common delay associated with still birth was observed type 1 delay 62.42% i.e. delay in decision to seek care. As ours is a tertiary care center with a number of cases referred from outside, availability of trained obstetricians and emergency LSCS facilities round the clock, intense intrapartum monitoring with practices such as CTG monitoring , birthing positions and birth companion type 3 delay in our study is less as compared to other studies.

CONCLUSION

According to the current study conducted for analyzing causes of stillbirth, hypertensive disorders of pregnancy, followed by fetal factors and antepartum hemorrhage were recognized as major contributing factors in stillbirth. Creating awareness among general population about hypertensive disorder of pregnancy and its complications, motivating them to do regular ANC checkup, educating mothers regarding warning signs and symptoms will go long way in preventing stillbirths.. Stillbirths resulting as a consequence of fetal factors can be reduced by early ultrasonography, availability of timely anomaly scan. A corroborative effort of fetal medicine specialists, sonologist and obstetricians can reduce deaths resulting from fetal factors.

The next major cause is antepartum haemorrhage: centres at grass root level should be equipped and trained for early identification, treatment, proper and timely referral.

FUTURE SCOPE

Antenatal services are not availed by many women inspite of government efforts to provide antenatal care to all mothers. There is a need to spread awareness and also to improve the quality of ANC services at all levels. The logical future direction at this stage is to conduct longitudinal epidemiological studies to have a proper estimate of the burden of stillbirth in India. It is equally important to educate and increase awareness among both the caregivers and the ANC mothers. Delay 1 still is the major reason of delay in majority of mothers, ignorance, lack of empowerment, lack of support from families domestic violence all these factors lie in the roots of stillbirth, thus spreading awareness regarding their rights, to mothers and making ANC care available through facilities like M Mitra (mobile message service for ANC mothers informing them about ANC care and follow up) and at every mother's door step, will help make every baby count.

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