OPEN ACCESS
Scholars International Journal of Obstetrics and Gynecology
Abbreviated Key Title: Sch Int J Obstet Gynec
ISSN 2616-8235 (Print) |ISSN 2617-3492 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com/sijog

Original Research Article

Intrauterine Fetal Demise: A Retrospective Study in Tertiary Care Hospital

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DOI: 10.36348/sijog.2020.v03i02.006 | **Received:** 01.02.2020 | **Accepted:** 10.02.2020 | **Published:** 19.02.2020

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Abstract

Background: An Intrauterine Fetal Demise (IUFD) is a major obstetrical catastrophe at any gestational age but the emotional pain and distress caused by this event increases in direct relation to the duration of pregnancy. The objective of the present study was to determine the incidence and possible causes of Intrauterine Fetal Demise (IUFD), and to determine preventive measures. Methods: Retrospective observational study was done from Jan 2019 to Dec 2019 at Government General Hospital, RIMS, Kadap, AP, India. Inclusion criteria were all the pregnant women with IUFD delivered at the centre, at or above 24 weeks of gestation. The methodology followed were parameters of assessment for analysis were maternal age, parity, probable causes for IUFD, mode of delivery, maternal complications Statistical data were analyzed using SPSS version 25. ***Results:*** The incidence of IUFD was 29/1000 live births delivered during the reporting period. IUFD incidence was higher in multiparous women compared to primiparous women. The rate of IUFD was almost similar between sex of the baby was analyzed. 49.4% of fetuses had signs of maceration. The major cause of IUFD was severe preeclampsia (48.1%) which included HELLP syndrome, IUGR, Abruption. Maternal anemia (20.4%), anhydramnios (6.3%) were some of the other important causes of IUFD. ***Conclusions:*** This study was conducted to determine the incidence of IUFD and associated maternal risk factors. By understanding the contributing factors, we can seek ways of avoiding recurrence of IUFD by proper antenatal care and early diagnosis of obstetric complications and its appropriate management.

Keywords: Contributing factors, IUFD, Incidence, Preeclampsia.

INTRODUCTION

An Intrauterine Fetal Demise (IUFD) is a major obstetrical catastrophe at any gestational age but the emotional pain and distress caused by this event increases in direct relation to the duration of pregnancy. Lot of importance is given for maternal, neonatal and child health all over the world. There is increasing attention and investment in the field of maternal and neonatal health care but still births remain most under studied or documented[1]. Intra uterine fetal death (IUFD) is defined as fetal death after 20weeks of gestation [2]. It can be further classified into early or late IUFD. Early IUFD, if fetal death occurs before 24 weeks of pregnancy and late IUFD, if fetal death after 24weeks [2]. The causes of IUFD, in a large percentage of cases remain unknown, even where extensive testing and autopsy have been performed. A rarely used term to describe this is "sudden antenatal death syndrome" or SADS, a phrase coined by Cacciature and Collis in 2000[3].

Many still births occur at full term to apparently healthy mother and a post-mortem evaluation reveals a cause of death in only 40% of autopsied cases [4]. It is important to investigate the cause of IUFD. If the cause of an IUFD can be identified, the family will have answers about the possibility of recurrence and can seek appropriate medical treatment to prevent recurrence. Identification of causes of IUFD will be helpful in counseling the parents as well as for formulating preventive measures [5]. Health education to encourage the utilization of the available antenatal care services, family planning and genetic counseling are being advocated strongly as possible preventive measures [6]. Objectives of this

study were to find out the incidence and possible causes of IUFD, and to suggest preventive measures.

METHODS

Retrospective observational study was done from Jan 2019 -Dec 2019 at the Government General Hospital, RIMS, Kadapa, AP, India.

All the pregnant women delivered at the hospital at or after 24 weeks of gestation with Intrauterine Fetal Demise or Fresh Still Birth, were enrolled in present study.

The parameters for the analysis included maternal age (<20 years, 20- 30 years and >30 years), parity, and probable cause for IUFD (if found on gross examination, preexisting maternal or fetal complication diagnosed during pregnancy), mode of delivery (vaginal /LSCS/ Laparotomy), maternal complications-early and late IUFD.

All the details were thoroughly scrutinized and entered in a preformed proforma. The proformas were then compiled altogether and inferences were drawn.

The statistical data collected was entered in the computer using SPSS version 25. Observed differences were subjected to Chi-square test and Fischer test and incidence was calculated for 1000 live births.

RESULTS AND DISCUSSION

There were a total of 6320 deliveries with 182 cases of intrauterine fetal demise (IUFD). The incidence of IUFD was 29/1000 live births in present study. When maternal characteristics were studied (Table 1), 128 of the mothers were between 20-30 years of age (71.9%). 23 were less than 20years (12.08%) and 31 in more than 30years (15.9%) of age group. Out of 182 women, 73 were primigravida (40.1%) and 109 were multigravida (59.8%). 92.3% of them had non consanguineous marriage. When gestational age was observed, 54 of the IUFDs were less than 28 weeks (29.6%) of gestation. 76 were between 28-34 weeks (41.7 %), 52 were between 34-37weeks (28.5%). 158(86.8%) had vaginal delivery and 24 (13.1%) had Caesarean delivery for other obstetric indication.

Table-I: Maternal Characteristics

Maternal Characteristics		Frequency	Percent
Maternal age in years	<20	23	12.08%
	21-30	128	71.97%
	>30	31	15.93%
Gestational age in weeks	<28 weeks	54	29.6%
	28-34 weeks	76	41.75%
	34-37 weeks	52	28.57%
Parity	Primi	73	40.1%
	Multi	109	59.8%
Consanguinity	Yes	14	7.69%
	No	168	92.30%
Mode of delivery	Vaginal	158	86.81%
	Caesarean	24	13.18%
Sex of baby	Boy	98	53.84%
	Girl	84	46.15%

Table-II: Maternal Age

Age	Total Number of Cases	Percentage
<20	31	15.93%
21-30	128	71.97%
>30	23	12.08%

Table-III: Gestational Age

Age	Total Number of Cases	Percentage
<28 weeks	54	29.6
28-34 weeks	76	41.75
>37	52	28.57

Table-IV: Comparison between parity

Parity	Total Number of Cases	Live births	IUFD
Primigravidae	3097	3016 (97.38%)	73 (2.4%)
Multigravidae	3223	3123 (96.89%)	109 (3.4%)
Total	6320	6139 (97.13%)	182 (2.9%)

When fetal parameters were studied 98 (53.8%) were boys and 84(46.1%) were girl babies. Out of them 72 (39.5%) had signs of maceration and two babies had true knot in the cord. Cord around the neck was seen in 21.25% of the. When the incidence of intrauterine fetal demise was calculated per 1000 live births for the maternal age, there was no difference in the various age groups (Table 2). There was a significant difference between parity; IUFD was observed more in multigravida compared to primigravida (Table 4).

Many of the risk factors were overlapping where causes of IUFD could not be assigned to one particular risk factor. Severe preeclampsia along with abruption, HELLP syndrome, ante partum eclampsia and severe intrauterine growth retardation (IUGR), Oligohydroamnion and anemia are the major causes of IUFD.

The incidence of IUFD reported from western countries ranges from 4.7% to 12.0% and incidence of IUFD in India, reported from various centers ranges between 24.4 to 41.9% [7-9]. However, the incidence rate of IUFD in present study is 29/1000 live births.

The incidence is higher in the present study and it may be due to a tertiary care referral hospital. Most of the cases would be referred from all over the district. 71.9% of the patients were between 20-30 years of age [10]. The incidence was higher in lesser gestational age group compared to higher gestational age and 92.3% of them had non-consanguineous marriage. In present study 40.1% of cases were primipara and 59.8% of cases were multipara, which was unlike study conducted by Singh et al where parity had no association with IUFD [11].

When the risk factors were analyzed severe eclampsia was seen in 48.1% of the cases, and Ante partum eclampsia was seen in 5%. Incidence of abruption was 8.9%. Chronic hypertension accounted for 3.8% of IUFD. 20.2% of pregnancies were complicated by anemia, out of them 6.3% had severe anemia needing blood transfusion. Mild anemia was seen in 2.5% and moderate anemia was seen in 11.4% of cases. Anhydramnios (6.3%) were the other risk factors for IUFD noted in present study [1]. When fetal parameters were studied, 53.84% of babies were male and 46.15% were females which was almost similar to Singh et al study[7]. Out of them, 72 had signs of maceration, which was comparatively higher [7]. None of the fetus had any anomalies. 21.25% of babies had cord around the neck. Two babies had true knot on the cord. When obstetric history was analyzed 34.17% of the cases had history of previous abortion. Out of them 22.5% had one abortion, 8.8% had two abortions, 2.5% had three abortions previously. 10% had history of one previous IUFD and 1.3% had two previous IUFD.

Most of the causes of IUFD in present study were preventable. When a pregnant lady is detected to have pre-eclampsia, which is the most common cause in present study, she should be treated aggressively with adequate control of blood pressure and close monitoring of other parameters like fetal growth, liver, and renal function tests along with coagulation profile. This makes it more pertinent to smaller centers in India to identify pre-eclampsia in its early stages and keep the threshold lower to refer to an appropriate center. Timely decision for delivery should be taken to avoid the associated complications in general and specifically IUFD. Nearly one-fifth (20.4%) of present study group had anemia, indicating that proper precautions should be taken to prevent and also treat anemia early in the pregnancy. This will avoid complications associated with anemia especially pre-eclampsia, morbidity and mortality associated with anemia and pregnancy.

To summarize the results which can have implications on preventing IUFD in India, in rural and peripheral centers where antenatal care is provided, health care personnel should be trained to identify the pregnancy as high risk or low risk. The proper risk stratification will help to reduce the complications of high risk pregnancy including early detection of pre-eclampsia, anemia, GDM, previous pregnancy loss. This will aid timely referral to a higher center.

CONCLUSION

This study was conducted to determine the incidence of IUFD and associated maternal risk factors. By understanding the contributing factors, we can seek ways of avoiding recurrence by proper antenatal care and early diagnosis of complications and its proper management. Antenatal screening for anemia, preeclampsia, previous pregnancy loss and antenatal supervision can play an important role in decreasing the incidence of IUFD. By determining the cause of IUFD the chances of recurrence can be reduced and further pregnancy complications can be prevented.

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