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Intrauterine Fetal Death (IUFD): A Retrospective Study Conducted in a Tertiary Care Center of Western Rajasthan, India

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Abstract: ***Background: an intrauterine fetal demise is a tragic event at any gestational age causing emotional pain and psychological distress to parents and their family. The objectives of the present study were to determine the incidence of IUFD in population and to find out possible causes of IUFD, in order to determine preventive measures. Methodology: This is a retrospective observational study done in the department of obstetrics and gynecology Dr SN medical college Jodhpur Rajasthan for the duration of 1 year. Inclusion criteria were all pregnant women with IUFD delivered at our centre at or above 24 weeks of gestation. Maternal and fetal records were analysed for studying demographic profile, parity, booked and unbooked cases, mode of delivery, possible causes of IUFD. Results: The incidence of IUFD in our study was 27 per 1000 live births. The incidence of IUFD increased with decreasing gestational age. Incidence was high in multiparous women. The major maternal cause of IUFD was preeclampsia. Conclusion: The study was conducted to determine the incidence and to find out possible causes of IUFD. Our study highlights the importance of booking and regular antinetal visits for early detection and treatment of avoidable causes of IUFD.***

Keywords: IUFD, intrauterine fetal death, retrospective observational study

1. Introduction

ACOG refers to intrauterine foetal death (IUFD) as the demise occurring at or later than 20 weeks. In a recent RCPI (Recent clinical practice investigation guideline), stillbirth is taken as a baby delivered without signs of life from 24 weeks gestation, and IUFD is taken to refer to death in utero after 24 weeks gestation. [1]

An Intrauterine foetal Demise (IUFD) is a major obstetrical tragedy at any gestational age and has profound emotional pain, psychological distress and social effect on parents. 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 through various government health programme but still births and IUFD remain most under studied or documented.

Prevalence of IUFD is direct indicator of quality of antenatal care, suboptimal support in that society, poor socioeconomic status and illiteracy.[2]

It is reported that 45% of all stillbirths were found to be related to suboptimal care and failure to recognize women at high risk for such events. A change in frequency or strength of fetal movement are also often noticed by many mothers; therefore, prompt check-ups are required for concerns regarding fetal movement.[3]

Systematic analysis show that the estimated number of global stillbirths was 2·64 million in 2009. It was 3·03 million in 1995. In 2009, 76·2% of stillbirths occurred in south Asia and sub-Saharan Africa, out of these 23.2%were from India.[4]

This problem needs to be discussed especially in our country where suboptimal antenatal care and support along with unattainable health care facilities lead to this and to reduce risks in subsequent pregnancy.

Aims and Objectives

1) To determine the incidence of IUFD over an 1-year duration in a tertiary care centre of western Rajasthan.
2) To identify the problems both in the causes and in the failure in their identification, in order to suggest preventive measures.

2. Materials and Methods

Study location- Department of Obstetrics and Gynaecology Dr. S.N. Medical College, Umaid Hospital, Jodhpur, Rajasthan, India.

Study duration- April 2021 to April 2022.

Study design- retrospective observational study.

Study population- 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 (20-30 years), parity, and probable cause for IUFD (if found on gross examination, pre-existing maternal or fetal complication diagnosed during pregnancy), booked case or unbooked case, mode of delivery (vaginal /LSCS/ Laparotomy), maternal complications-early and late IUFD and placental histopathology.

"Booked Case" by definition (WHO) is when the pregnant lady has had a minimum of three visits for antenatal check-up after she was registered and confirmed to be pregnant. All others who had no prior antenatal visits would be unbooked case".

Inclusion criteria:
All those cases who were diagnosed as intrauterine dead fetus at the time of admission or during intranatal period with gestational age more than 24 completed weeks of pregnancy were included in the study.

Exclusion Criteria:
Babies born below completed 24 weeks of gestation were excluded from the study.

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.

3. Results

There were a total of 21560 deliveries in Umaid hospital during the study period in which 588 (2.73%) were intrauterine foetal demise (IUFD).

The incidence of IUFD was 27.2/1000 live birth in the present study.

Majority of IUFD (80.2%) 471 cases occurred in the age group of 20-30 years. 25 were <20 year and remaining 92 were between age group 20-30year.

Majority of cases were booked 400 (68%), while 188 (32%) IUFD were unbooked cases. Majority 89% of cases were referred from outside after the diagnosis of IUFD and rest of the cases were presented directly to our institute. After detailed history and evaluation it was found that booking was done either very late or the patient had irregular and infrequent antenatal visit at institute.

Primigravida had the highest number of IUFD (56.58%) as seen in Table 1.

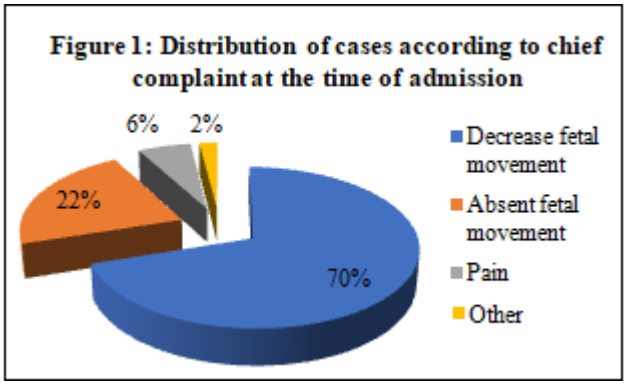
When gestational age was observed 148 of the cases were <28 week of gestation (25.2%). 265 IUFD were 28-34 weeks (45%), 90 IUFD were between 34-37 weeks (15.4%), 85 IUFD were >37 weeks of gestation (14.4%).

Out of total 588 cases, (53%) 341 IUFD had signs of maceration out of which 3 babies had true knot in the cord, 2 babies had five loop of cord around the neck, remaining 247 were fresh stillbirth. Majority of patient 70% came to hospital with complaint of reduced fetal movement count.

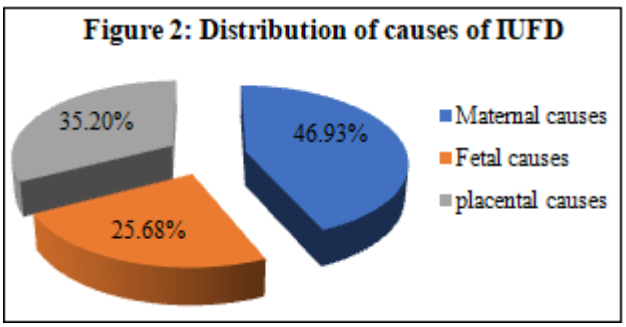
Induction of labour was done in 42% of cases, 58% went into spontaneous labour. 568 (96.6%) had vaginal delivery and remaining 20 (3.4%) undergo caesarean section for obstetric indication.

Table 1: Maternal Characteristics

Maternal characteristics	Frequency		percent
Maternal age in years	<20yr	25	4.20%
	20-30	471	80.20%
	>30	92	15.60%
Antenatal visits	Yes	400	68%
	No	188	32%
Parity group	Primi	241	41%
	Multi	347	59%
Consanguinity	Yes	45	7.70%
	No	543	92.30%
Gestational age in weeks	<28wks	148	25.20%
	28-34	265	45%
	34-37	90	15.40%
	>37	85	14.40%
Baby sex	Boy	306	52%
	Girl	282	48%
Signs of maceration	Yes	312	53%
	No	276	47%
Mode of delivery	Vaginal	568	96.60%
	Caesarean	20	3.40%



According to figure 1, in the present study 70% patients came with complaint of decrease fetal movement count, 22% came with complaint of absent fetal movement count, 6% with pain and remaining 2% with leaking per vaginum and bleeding per vaginum.



Maternal causes	N (%)
HDOP	276 (47%)
Anaemia	153 (26%)
Medical disorders (GDM/DM)	61 (10.5%)
Infections	93 (15.6%)
others	5 (0.9%)

Distribution of cases according to causes of IUFD table no 2

Table 3

Placental causes	N (%)
Abruption	207 (35.2%)
Previa	76 (13%)
Cord prolapse	8 (1.3%)
Infection	75 (12.8%)
others	222 (37.7%)

Table 4

Fetal causes	N (%)
Congenital anomaly	151 (25.6%)
IUGR	106 (18%)
Twin	95 (16.2%)
malpresentation	81 (13.8%)
others	155 (26.4%)

According to table 2 leading maternal cause of IUFD were HDOP (hypertensive disorder of pregnancy) seen in 47% of cases. As seen in table no 3 most common identifiable fetal cause of IUFD was congenital anomaly seen in 25.6% of cases. Most common placental cause of IUFD was abruption seen in 35.25% cases.

4. Discussion

Intrauterine fetal demise is a sensitive indicator of quality of antenatal care provided to pregnant women. It causes psychological trauma to patient and their family. Despite declining overall perinatal mortality rate over the years, IUFD is still occur at very high level.

The present study was conducted in the department of obstetrics and gynaecology, DR. S.N. Medical College, Jodhpur a tertiary care centre of western Rajasthan for the duration of one year. It was a retrospective observational study. The aim of the study was to find out incidence and possible causes of IUFD in the population.

Incidence of IUFD in western countries is 4.7%-12%.[5] Incidence in India from various centre ranges from 24.4-41.9%.[6,7] In the present study incidence of IUFD was 27/1000 live birth.

Unlike other studies where majority of cases were unbooked, in our study incidence of IUFD was high in booked patient with infrequent and irregular visit. Al Kadri et al also found similar results that risk of IUFD was high in whom not receiving antenatal check up 70%.[8,9]

In our study incidence of IUFD was high in age group 20-30 years. Our study results were comparable with study did by patel et al.[10] In the present study most common gestational age at time of diagnosis of IUFD was 28-34 weeks. In present study 57% cases were multigravida. Similar observation was made by Raymond E G et al and Kanavi et al where maximum number of cases of IUFD were multigravida.[11,12]

In the present study most common maternal cause of IUFD was HDOP and most common identifiable fetal cause of IUFD was congenital malformation similar observations was made by Kumar R et al.[13]

To reduce the incidence of IUFD the knowledge of identifiable risk factor in population may contribute in decreasing recurrence. This could be achieved by education and importance regarding proper antenatal check up and follow up among population. More emphasis is given on prenatal screening and timely intervention.

5. Study Limitation

Present study was limited by not performing autopsy and tissue biopsy due to social and cultural beliefs. To find out accurate cause of IUFD especially where cause is unexplained perinatal autopsy provide important information.

6. Conclusion

Our study show declining in incidence of IUFD but more emphasis given to reduce the recurrence by timely identifying common avoidable maternal, fetal and placental risk factors. Antenatal screening for anaemia, pre Eclampsia, gestational diabetes mellitus, previous pregnancy loss and antenatal supervision play an important role in decreasing incidence of IUFD.

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