



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

A RETROSPECTIVE STUDY TO EVALUATE ETIOLOGICAL FACTORS ASSOCIATED WITH INTRAUTERINE FETAL DEATH AT TERTIARY REFERRAL CENTRE

KEY WORDS: Intrauterine fetal death(iufd)

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ABSTRACT

Background: Intrauterine fetal death is a major obstetrical complication and a devastating experience for parents as well as obstetricians. If the causes of IUFD can be found, an effective strategy for prevention of IUFD can be formed and maternal complications can thus be prevented. This study aims at identifying the various causes, etiological factors and complications of IUFD. **Methods:** observational study was carried out in a tertiary care hospital from 1st October 2023 to 31st March 2024. **Results:** The total live births were 3,862 in this study period and 125 IUFD occurred. Hence proportion of IUFD was %. In this study, incidence of IUFD was higher among 70% emergency admissions and 20 % were unbooked cases compared to 10% booked admissions. In this study 20 (22.4%) were 19 years of age, 70 (56%) were between age of 21-25 years, and elderly primi 1 (1.2%). 47% were primi, 40% were G2. normal vaginal delivery occurred in 84 (67%) Caesarean section required in 36 (28.8%) and hysterotomy in 5 (4%). PIH and eclampsia together accounted for 27 (21.6%) cases of IUFD. Abruptio placenta due to PIH accounted for 10 (12.5%). In present study, fetal cause was IUGR 10 (8%) followed by congenital malformations 4 (3.2%) cases of IUFD. we had labour complications (6.4%) which includes cord prolapse (4), rupture uterus(3), cord around neck (3). **Conclusion:** Anemia, PIH, accidental haemorrhage were leading causes of IUFD. Majority of women who had IUFD were emergency admission who had not received adequate antenatal care. A significant proportion of IUFD is preventable by health education to patients and community for regular antenatal care, about warning signs during antenatal period, hospital delivery and early referral.

INTRODUCTION

- Intrauterine fetal death is a major obstetrical complication and a devastating experience for parents as well as obstetricians.
- WHO¹ defines "fetal death means death prior to complete expulsion or extraction from the mother of a product of human conception irrespective of duration of pregnancy and which is not an induced termination of pregnancy. The death is indicated by the fact that after such expulsion or extraction the fetus does not breathe or show any evidence of life such as beating of the heart, pulsation of umbilical cord, or definite movement of voluntary muscles. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished fleeting respiratory efforts or gasps
- ACOG defines as death of fetus past 20 weeks of gestation and or weight of 500gms and above²
- The causes of fetal death includes maternal (5 to 10%), fetal (25 to 40%), placental causes(20 to 35%) and sometimes unknown(25 to 35%).
- The incidence of IUFD is 45 per 1000 pregnancies in developing countries and 3 per 1000 births in developed countries
- If the reason of IUFD is evaluated it is possible to initiate necessary treatment to avoid recurrences
- The recognition of IUFD causes will aid in both counselling parents and developing preventive measures.³
- IUFD can be used to assess the level of antenatal and intranatal care
- According to WHO, a "booked case" is when a pregnant woman has had at least three antenatal check-ups after being registered and confirmed to be pregnant. All others with no earlier antenatal visits are treated as un-booked case".⁴
- Prevention is by health education and utilization of antenatal services , family planning and genetic

counseling.⁵

Aims And Objectives

- Objective of current study was to determine incidence of intrauterine fetal death and to evaluate the maternal and fetal factors responsible for intrauterine fetal death.

MATERIALS AND METHODS

- This is a retrospective observational study conducted in the department of Obstetrics and Gynecology in Government General Hospital, Guntur.
- Study period - 6 months from October 2023 to March 2024
- The study population consisted of 125 pregnant women with IUFD , who were admitted in tertiary care center
- The total live births were 3,862 in this study period
- It consists of booked, unbooked , referral cases (mostly which are from rural and semirural areas)
- Parameters such as maternal age , parity , probable cause of IUFD(Pre existing maternal or fetal cause), gestational age , weight of the baby were included

Inclusion criteria:

- All women with IUFD with gestational age beyond 20 weeks to full term pregnancy

Exclusion Criteria:

- All abortions were excluded

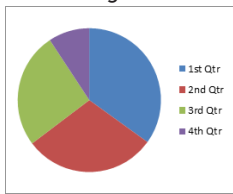
RESULTS:

- **Table 1: Maternal age and IUFD**
56% of cases were seen in 21 to 25 years of age



AGE GROUP	N	%
<20 Years	28	22.4
21 to 25 years	70	56%
26 to 30 years	12	9.6%
>30 years	15	12%

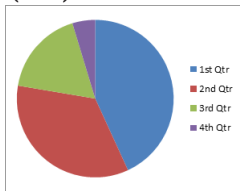
Table 2: Gravidity of patient and IUFD correlation
37.6% were found to be Primigravidas



PARITY	N	%
PRIMI	47	37.6
G2	40	32.1
G3	28	28
>G4	10	10

Table 3: Gestational age:

Most of the women (44%) were between 32 TO 36 weeks



GESTATIONAL AGE	N	%
<32 weeks	44	35.2
32 to 36 weeks	55	44
>37 to 40 weeks	20	16
>40 weeks	6	4.8

Table 4: Maternal Causes in case of intrauterine fetal demise

• PRE ECLAMPSIA AND ECLAMPSIA	27	21.6%
• DIABETES MELLITUS	13	10.4%
• OLIGOHYDRAMNIOS	6	4.8%
• ANEMIA	5	4%
• FEVER	5	4%
• JAUNDICE	3	2.4%
• PRETERM	2	1.6%
• RH NEGATIVE	3	2.4%

Table 5: Fetal and Placental causes of intrauterine fetal death.

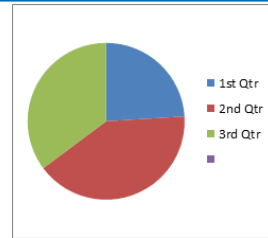
FETAL CAUSES	N	%
IUGR	10	8
CONGENITALMALFORMATIONS	4	3.2
TWINS and TRIPLETS	4	3.2
PLACENTAL CAUSES		
ABRUPTIO PLACENTA	13	10.4
PLACENTA PREVIA	12	9.6
UNKNOWN CAUSES	8	6.4

Table 6: Mode of delivery in case of intrauterine fetal demise

NORMAL DELIVERY	84(67.2%)
CEASAREAN SECTION	36(28.8)
PRIMARY LSCS	6(4.8%)
REPEAT LSCS	30(24)
HYSTEROTOMY	5(4%)

Table 7: Booking status of patient

BOOKING STATUS	%
BOOKED	10
UNBOOKED	20
REFERRED	70



DISCUSSION:

- The incidence of IUFD in India was 24.4 to 41.9 . In this study the incidence was 31.2 %
- Being a tertiary care hospital, greater number of cases were referred and most of the high risk cases seek treatment at the time of admission only
- In this study, incidence of IUFD was higher among 70% emergency admissions and 20 % were unbooked cases compared to 10% booked admissions. Korde NV et al. 6 and Anjali C et al. 6 reported a higher SBR in emergency admissions as 84.9% and 89.5% respectively. Kameshwaran et al. 7 observed five times higher stillbirth rate in emergency cases.
- Lack of inadequate antenatal care (ANC) is the most important problem that needs urgent attention. If patient is given adequate ANC then complication like anemia, PIH etc. can be diagnosed at an earlier stage and can be managed. So, IUFD due to these causes can be prevented.8
- In this study 20 (22.4%) were 19 years of age, 70 (56%) were between age of 21-25 years, and elderly primi 1 (1.2%). Showghy et al. stated that pregnancy at the age of 16 years and less then increase the IUFD risk factor 4 times. 10 Frett et al. has concluded that age of 35 and more can increase risk of fetal death at the rate of 1.5 times. 9
- In this study 47% were primi, 40% were G2. The gestational age was between 32 to 36 weeks which accounts for 44% of cases.
- In present study, normal vaginal delivery occurred in 84 (67%) compared to Korde NV et al. 5 and Chitra K et al. 11 who had reported vaginal delivery in 73.1% and 89.4% respectively. Surgical intervention required in 41 (32.8%). Caesarean section required in 36 (28.8%) and hysterotomy in 5 (4%).
- The most common maternal cause for IUFD was pre eclampsia and eclampsia(33.%) followed by diabetes mellitus (10.4%)
- In the present study, PIH and eclampsia together accounted for 27 (21.6%) cases of IUFD. Abruuptio placenta due to PIH accounted for 10 (12.5%). Anjali C et al. 12 reported PIH causes IUFD in 30% and abruuptio placenta in 10.4%. Korde-NV et al. 10 reported the most common cause for IUFD was abruuptio placenta 21.9% and PIH-eclampsia together accounted for 18.7% . In the study by Kumar et al. 16 PIH was the most common cause of IUFD in 19% and accidental haemorrhage in 9.8%. Al Kadri et al. 9 reported 25 and 3 fold increases risk of IUFD in patients having PIH and abruuptio placenta. Antepartum hemorrhage leads to maternal blood loss leading to hypovolemia, anemia, hypoxia, hypertonic uterine contraction causing fetal hypoxia and death. In PIH, vasospasm decreases blood flow to all organs particularly uteroplacental perfusion so oxygen supply to fetus decreases and leads to fetal hypoxia and IUFD.
- In present study, fetal cause was IUGR 10 (8%) followed by congenital malformations 4 (3.2%) cases of IUFD. Anjali C et al. 12 and Kumar et al. had reported IUFD due to congenital malformation in 10.5% and 10% respectively.
- We had many obstetric cases with complicated medical disorders includes jaundice, fever and anemia which contributed IUFD and labour complications (6.4%) which includes cord prolapse (4), rupture uterus(3), cord around neck (3).

CONCLUSION:

- Lack of antenatal care is directly related to socioeconomic status and educational level of women
- Health education towards stressing the importance of antenatal care, ante partum screening for congenital malformations and encouraging hospital deliveries under supervision of appropriately trained personnel will go a long way in reducing a number of preventable fetal deaths.
- Those IUFD which are unexplained are unavoidable. These patients need detailed genetic studies for one or both partners. Such couples also need psychological counseling, nutritional advice and pre-pregnancy planning.
- Hence early identification of high risk cases who are prone for pre eclampsia , GDM , H/O IUFD in previous pregnancy, BOH are to be referred to tertiary care centre in their early visits
- Screening for high risk cases and risk factors to be identified in the first trimester to prevent such complications.

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