

Retrospective Analytical Study on Intrauterine Death and its Causes in Pregnancy >28 Weeks

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Abstract: **Background:** This study was done to identify the causes of intrauterine fetal death after the age of viability and take early intervention measures to decrease its incidence in developing countries and improve the pregnancy outcomes. **Materials and methods:** The retrospective study was done over a period of 6 months. Out of 2800 deliveries, 140 were IUFDs. All cases beyond the period of viability were included. The IUFDs were confirmed on ultrasound examination following which the decision for termination of pregnancy was taken. **Result:** According to the study, the incidence of IUFDs beyond the age of viability was 140 (5.7%). Out of these, 95% of the cases were delivered vaginally. Amongst the common causes of IUFDs were abruption due to hypertensive disorders (33.5%) and Anaemia (10.7%). **Conclusion:** Intrauterine fetal death is a good parameter to assess the maternal and perinatal health in a given population. A significant proportion of IUFDs is preventable by health education, routine antenatal visits, identification of warning signs, early referral and hospital delivery.

Keywords: IUFD, Abruption, Anaemia

1. Objectives

To study the causes of intrauterine fetal death according to maternal, fetal and placental issues and demographic patterns

Study high risk factors and early detection of preventable factors in future pregnancy.

2. Introduction

Intrauterine fetal death is an important indicator of maternal and perinatal health of a given population and the quality of antenatal care given in that society. The incidence of intrauterine fetal deaths in developing countries is two - third of the total deaths. The fetal deaths are related to maternal, placental or fetal complications. This study was undertaken to study these factors and their association with intrauterine fetal death. Early booking, adequate antenatal care, early identification of the risk factors and timely intervention helps in reducing the incidence of IUFDs. Identification of the major contributory factors will help us in imparting better patient care.

3. Materials and Methods

A retrospective study was done over a period of 6 months. Out of 2800 deliveries, 140 were IUFDs. All cases beyond the period of viability (>28 weeks) were included. The IUFDs were confirmed on ultrasound examination following which the decision for termination of pregnancy was taken. Women with sonologically confirmed diagnosis of IUFD were included in the study. Patients were admitted through ANC clinic and Obstetrics emergency. A total of 140 cases of IUFD were identified in this period. Retrospective analysis of all the records were done.

Parameters studied were, demographic profile, obstetric details of the present and past pregnancies, gestational age at the time of diagnosis, and any other medical or obstetrical

complication associated was also noted. Peripartum events were analysed for any complications. Investigations recorded on the case sheet were also studied, like, haemogram, blood group and Rh factor, HIV, HBsAg, VDRL, random blood sugar, LFT, RFT, and serum TSH levels. Special investigations were also studied, according to the relevance of the case. Recorded data was studied to look for the probable cause and any peripartum complications. Results were obtained using the percentage method.

Subject selection

Inclusion criteria

- Antenatal females confirmed of intrauterine fetal death on sonography beyond the age of viability i.e. > 28 weeks of gestation and admitted for termination of pregnancy.
- Only those females with singleton pregnancy are included.

Exclusion criteria

- Antenatal females with < 28 weeks of gestational age
- Antenatal females with multiple fetus are not included in the study.

4. Results

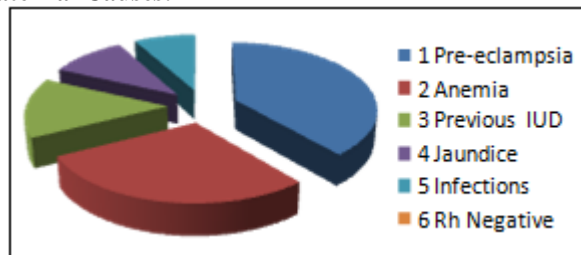
A retrospective study on intrauterine fetal deaths was done over a period of 6 months from July 2020 to December 2020. A total of 2800 deliveries occurred over a period of 6 months from which 140 intrauterine deaths occurred. The incidence of IUFDs was found to be 5%.

In 60 % of the cases, the females had a past history of abortion or intrauterine fetal death. In 38.5 % (54 /140 cases) of cases, no identifiable cause of IUFD were detected.

It was observed that the overall causes of IUFDs could be divided into maternal, fetal and placental causes.

It was observed that 35.7 % of the cases were associated with maternal causes of IUFDs, 20.5% associated with placental and 7.8 % with fetal causes.

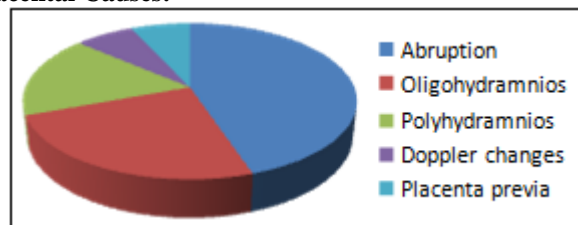
Maternal Causes:



Cause	No. of cases	Percentage
Pre - eclampsia	19	13.5
Anaemia	14	10
Previous IUFD	7	5
Jaundice	5	3.5
Infections	4	2.8
Rh Negative	2	1.4

Amongst maternal causes, Hypertensive disorders (13.5%), anaemia (10%) and previous history of abortion or intrauterine death (5%) were amongst the major factors.

Placental Causes:



Cause	No. of cases	Percentage
Abruption	13	48
Oligohydramnios	7	26
Polyhydramnios	5	18
Doppler changes	2	8
Placenta Previa	2	8

Placental causes were evaluated and abruption (9.2%), oligohydramnios (5%) were found to comprise majority of the cases

Fetal Causes:

Cause	No. of cases	Percentage
Congenital Anomaly	10	7.1
Cord prolapsed	1	0.7

Amongst the fetal causes, congenital anomaly (5%) was the major cause behind IUFDs.

Demographic Patterns

	Number of cases (n = 140)	Percentage
AGE (in years)		
< 20	43	30.7
21 - 30	78	55.7
31 - 40	15	10.7
>40	4	2.8
PARITY		
Primigravida	54	38.5
Multigravida	86	61.4

REGISTRATION		
Booked	47	33.5
Unbooked	93	66.4
RESIDENCE		
Rural	89	63.5
Urban	51	36.4

It was observed that the incidence of IUFDs was maximum seen between the age group 21 - 30 years (55.7%). The incidence was higher amongst multigravida patients (86%) as compared to primigravida (54%)⁷. Women from rural areas showed an incidence of 89% of IUFDs, the incidence being higher among unbooked cases.

Comparative Study

	Incidence in Previous studies	Incidence in Present study
Mufti et al		
Age (21 - 30)	67.1	55.7
Susmita et al		
Hypertensive disorders	19.6	13.5
Antepartum hemorrhage	12	48
Congenital anomaly	8.8	7.1

5. Discussion

The incidence of IUFDs reported from western countries is lower than that observed in our country.^{4, 5, 9} One reason of higher IUDs at our center could be due to the selection bias due to it being a tertiary care referral center and all major obstetric complication identified in the periphery and other centers would be referred here. The other reason could be a high number of unsupervised deliveries due to various reasons like illiteracy, low socioeconomic status and the paucity of monitoring facilities occurring in rural areas. The increased risk of fetal death is present amongst the teenage group and older women.^{7, 8} Most of our patients also belonged to poor socioeconomic status. The incidence is higher amongst women with minimal or no antenatal care.²

Many of the causes can be easily detected in early stages of pregnancy and active intervention can lead to better pregnancy outcomes.¹

Maternal causes like hypertensive disorders of pregnancy can be controlled by treatment with anti - hypertensive drugs which further would control placental factors like oligohydramnios, doppler changes, abruption that can inturn help in proper growth of the fetus.

Anaemia in developing countries like India are mainly nutritional and can be easily identified at early antenatal visits.

Medical causes like fever and jaundice can be detected and treated through regular check ups during the timely antenatal visits.

Placental causes like oligohydramnios and polyhydramnios can be diagnosed through routine antenatal scans which can be a warning sign to underlying pathology such as congenital anomaly, hypertensive disorders, gestational diabetes, infections during pregnancy. These can be detected early and decision regarding their management can be taken depending upon the prognostic factors.

Fetal causes like congenital anomaly can be identified through anomaly scans and decision for termination or continuation of the pregnancy can be taken accordingly.⁵ Genetic screening in cases of recurrent pregnancy losses can be opted at early antenatal visits. Neural tube defects can be prevented by proper preconceptional counselling of the couple.

Intrauterine fetal deaths can also lead to a number of complications like DIC, sepsis, acute renal failure and maternal mortality depending on the maternal conditions and the time since fetal death.

Thus, routine antenatal visits are proven to be highly beneficial in early identification of risk factors and active intervention at a very early stage.⁶ This in turn can be beneficial in predicting about the outcome of the pregnancy and reducing the incidence of intrauterine fetal deaths.

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