



## CLINICAL STUDY OF INTRAUTERINE FETAL DEATH IN TERTIARY HOSPITAL

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### ABSTRACT

**Objective:** Present study was conducted to know the incidence of intra-uterine fetal death, probable etiology for antepartum and intrapartum fetal deaths and management of the same and of antenatal care in prevention of intrauterine fetal deaths. **Materials and Methods:** Pregnancies diagnosed with IUFD and the cases of stillbirths were studied prospectively. Ante partum and intra partum events leading to fetal demise were recorded, socio-demographic and clinical characters were noted. **Result:** In study there were 8233 deliveries out of which 344 were IUFDs and stillbirths. The incidence of prenatal loss was 41.78 per 1000 live births. **Conclusion:** Despite advances in diagnostic and therapeutic modalities the rate of still birth is high. Socio-cultural background, poverty, illiteracy, lack of adequate antenatal care and inaccessible health care are the reasons that predispose women to IUFD and stillbirth. Majority of fetal wastage can be prevented with universal and improved antenatal care.

**KEYWORDS :** Intrauterine fetal death, stillbirth, incidence.

### INTRODUCTION

Intrauterine fetal death and still birth is a tragic event for the parents and a great cause of stress for the caregiver. Defined as the death of fetus more than 24 weeks of gestation and weighing more than 500 grams IUFD is major cause of pregnancy wastage. WHO definition of still birth is 'fetal death in late pregnancy'<sup>[1]</sup>.

The gestational age at which intrauterine fetal demise is considered a still birth varies from country to country. Some countries count demise at 16 weeks as IUFD while others consider fetal demise as late as 28 weeks as IUFD.

The Perinatal Mortality Surveillance Report [CEMACE, 2011] defines stillbirth as a baby delivered without signs of life after 24 completed weeks of pregnancy. ACOG refers to 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<sup>[1]</sup>. IUFD and intrapartum fetal deaths together constitute a large portion of perinatal mortality. Ante-partum fetal death contributes to about two thirds of perinatal mortality<sup>[2]</sup>.

Prevalence of perinatal deaths in a society is the direct indicator of the quality of antenatal care in the country<sup>[2]</sup>. The prevalence of IUFD has been reduced to a minimum unavoidable rate in developed countries; however it still remains very high in underdeveloped and developing countries. Prevalence of IUFD and stillbirth is expressed as number of fetal deaths per 1000 live births. Range of incidence varies in different countries, ranging from five in 1000 births in high income countries<sup>[3]</sup> and 36 in 1000 births in developing countries<sup>[4]</sup>.

Rate of perinatal deaths in India is 32 per 1000 live births, [35 per 1000 live births in rural areas and 22 per 1000 live births in Urban areas], still birth rates in India is 9 per thousand births, [9:1000 births in rural India and 8 in 1000 births urban India], according to the Indian census of 2006<sup>[5]</sup>.

### OBJECTIVES

To know the incidence of intra-uterine fetal death, probable etiology for antepartum and intrapartum fetal deaths and its management.

antenatal care in prevention of intrauterine fetal deaths in a prospective analysis of intrauterine fetal death getting admitted in the obstetrics ward of Dr. Sushila Tiwari Memorial Hospital, Govt. Medical College, Haldwani.

### MATERIAL AND METHODS

A total of 344 cases of IUFD and stillbirths over a period of two years were studied prospectively, in the department of obstetrics and gynaecology of Dr. Sushila Tiwari Memorial Hospital, Govt. Medical College, Haldwani, Uttarakhand, India.

Diagnosed cases of pregnancies with IUFD and stillbirths were included.

Criteria for diagnosis were absent fetal heart sounds and an ultrasonographic confirmation. Ante partum and intra partum events leading to fetal demise were noted.

Data collected to note the following parameters. Socio-demographic factors: Women's age, religion, parity, education level, socio-economic status, level of antenatal care, immunization, and Iron and calcium intake noted. Clinical parameters: Gestational age at the time of diagnosis, obstetric history, past and present medical history, history of pregnancy related and aggravated conditions noted.

Complete investigations like hemoglobin levels, blood group, urine examination, HIV, HbsAg, VDRL, blood sugar, Thyroid profile, LFT, KFT was noted.

Special investigations were done relevant to the case. Recorded data analyzed to identify probable cause of IUFD.

### RESULTS

During the study period there were 8233 deliveries out of which 344 were stillbirths. The incidence of stillbirths in our study was 41.78 per 1000 live births.

There were 180 male babies and 164 female babies.

Out of the 344 cases 12.21% were booked.

Majority of women were multigravida (60.46%).

Most cases of IUFD were diagnosed between 21 to 30 weeks of pregnancy.

Hypertensive disorder was found to be complicating 35.98% pregnancies, and 0.29% women were diabetic.

A total of 21.5 % cases presented with Ante partum hemorrhage out of which 2.03% were placenta previa, and 19.47% placental abruption.

anemia was found in 2.32% cases. Oligohydromnios was found to be responsible for the death of 3.19%babies, 8.13% fetuses had congenital anomalies.

Maternal infections were found to be complicating two.

There were 12.2% women where no causative factor was found for intrauterine fetal demise.

Further investigation –including an autopsy- was has been conducted in 45 fetuses of which 5 fetuses found to have congenital anomalies.

Unbooked –302 women (87.79%) Booked-42 women (12.21%) Total—344 women.

**Table 1: Causes of intra-uterine fetal death**

	CAUSES	TOTAL	PERCENT (%)
1	Pre-eclampsia	98	28.48
2	Eclampsia	26	7.50
3	Abruptio placenta	67	19.47
4	Unexplained	42	12.20
5	Congenital anomalies	28	8.13
6	Placenta previa	7	2.03
7	Cord prolapsed	8	2.32
8	Transverse lie with hand prolapsed	11	3.19
9	Post maturity	3	0.87
10	Rh Iso-immunization	2	0.58
11	Infection	2	0.58
12	Diabetes	1	0.29
13	Oligohydromnios	11	3.19
14	Meconium aspiration syndrome	8	2.32
15	Rupture uterus	9	2.61
16	Prolonged and obstructed labour	10	2.90
17	Breech presentation	3	0.87
18	Anemia	8	2.32
	<b>TOTAL</b>	<b>344</b>	<b>100</b>

**Table 2: Age of mother and IUD**

Sl. No	Age of mother (in years)	Total	Percentage (%)
1	20	84	24.41
2	21-30	245	71.22
3	> 31	15	4.36
	Total	344	100

**Table 3: Parity and IUFD**

Age of mother (in years)	Primi	Multi	Grand multi
20	51	33	-
21-30	78	165	2
>31	2	10	3
<b>Total</b>	<b>131</b>	<b>208</b>	<b>5</b>
<b>Percentage (%)</b>	<b>38.08</b>	<b>60.46</b>	<b>1.45</b>

**DISCUSSION**

Death of a viable fetus is a distress to the family and the obstetrician. Despite advances in medical science, diagnostic and therapeutic modalities, pregnancy wastage still occurs, at an unacceptably high rate. Although the perinatal mortality has reduced over last few

decades the fetal deaths still remain high. Present study observed 41.78 stillbirths per 1000 live births, a rate higher than the national average of 38 stillbirths per 1000 live birth.

Our facility is tertiary referral centre and many women are referred for further management after IUFD has already been diagnosed. Rate of stillbirths vary greatly in different studies and regions.. There is a need for retrospection and introspection to figure out probable causes of fetal deaths and device strategies to reduce the burden.

Although chromosomal abnormalities and congenital malformations are unavoidable, routine screening and selective termination of pregnancies would reduce these deaths. In our study 8.13% cases were due to congenital malformations. Other causes of fetal demise like PIH, Diabetes, IUGR, placental abruption, maternal infection, post-datism, Rh isoimmunozation are preventable causes of IUFD. Proper antenatal care, recognition of risk factors appropriate management, judiciously timed delivery, intra partum monitoring and timely intervention has reduced the incidence deaths resulting from these factors.

Over the years the causative factors responsible for IUFD have changed. There was an observation that not only the incidence of stillbirth reducing in developed countries, but the pattern of etiologies are also changing. Some causes incriminated in fetal wastage like syphilis, Rh isoimmunization thirty years ago, are no longer significant. Since the introduction of Rh immune prophylaxis, still births resulting from Rh isoimmunization have largely been reduced, accounting for less than 1%. Still births occurring during labor as a result of fetal hypoxia, are lesser due to electronic fetal monitoring [ $<1:10, 1000$ births].

However newer entities like thrombophillias, intrahepatic cholestasis of pregnancy have only recently been recognized as significant contributor to prenatal mortality. Despite extensive research and treatment modalities available many of the stillbirths remain unexplained. The percentage of unexplained fetal demise has stayed constant over the years. It was observed in the present study that 12.20% fetal deaths were in this category. These deaths occur in late pregnancies and sometimes even in women with regular antenatal care. Death of a well grown viable fetus is tragic enough but not knowing the cause of it can be distressing.

In a study by Jahanfer et(6) al it was found that women from rural and inaccessible areas women are more prone to perinatal fetal loss than the urban women. In recent times cesarean section rates have increased markedly thereby leading to increase in post cesarean pregnancies. Short interval since the cesarean birth, late admission to labor rooms, or late arrival from distant areas are the cases in which scar dehiscence and rupture uterus causes fetal death, however in our study there were nine such cases. Major causes of fetal demise in our study were hypertensive disorders of pregnancy, APH, Unexplained causes, Congenital anomalies. In a large Meta analysis for the cause of IUFD Ruth frets found at least fifteen causes accounting for stillbirths. According to her observations unexplained stillbirths and Severe IUGR

are two categories that contribute to most fetal losses. Socio-demographic factors also need to be considered as predisposing factor for prenatal deaths, especially in developing country like India, where many people live in rural areas. Illiteracy, early marriages, teenage pregnancies, unregulated reproduction, low socio-economic states, poor nutrition, lack of health education and antenatal care all conspire against the women's health and predispose her to IUFD and still birth[7]. Lack of antenatal care is directly related to the socioeconomic and educational level of women. Health education toward stressing the importance of antenatal care, ante partum screening for congenital malformations and selective pregnancy terminations, patient compliance and vigilant monitoring will reduce a number of preventable fetal deaths [8].

## CONCLUSION AND SUMMARY

In conclusion, stillbirth is a bitter calamity, prevention is therefore the hallmark. The antenatal fetal deaths can be minimized with regular ANC and timely admission.

Early detection of pre-eclampsia by regular ANCs and its treatment can reduce its complications including IUD and abruptio placentae in few cases thereby further reducing the stillbirth rate.

Death of the fetuses due to congenital anomalies and deaths due to cord accidents cannot be prevented totally. All other factors can be prevented from causing IUD by proper care during pregnancy and undertaking induction of labour at an optimum time.

Timely admission of the patients can reduce the stillbirth rate. The factors which prevent timely admission to a center where facilities are available include unavailability of proper transportation facilities and also in many of the patients, the financial constraint. Education of the patient to avail obstetric care, proper planning of mid wives visits to pregnant women, more frequent visits for high risk pregnancies, timely reference to specialist will minimize fetal wastage.

Hence improving the general condition of the people including their education, availability of emergency transportation facilities round the clock made free of cost, improvement of socio-economic status and lastly improving the facilities available at the peripheral centers can go a long way in reducing the still birth rate and hence the perinatal mortality rate.

344 cases of intrauterine fetal deaths were studied in the Government Medical College, Haldwani from September 2014 to September 2016.

- Incidence of IUD in this series is 41.78/1000 births.
- The major causes of IUD were PE and eclampsia and abruptio placentae.
- The maximum age incidence was between 21-30 years.
- Incidence of IUD was maximum in multipara
- Majority of patients belong to low socioeconomic class.
- Majority cases were emergency admission (unbooked cases).
- 52% IUDs were male babies and 48% were female babies.
- Majority of fetuses were of less than 2.5 kg.
- 57.55% of patients had spontaneous onset of labour pains.
- In 42.44% patients labour was induced
- 84.88% had vaginal delivery
- 3.77% of cases delivered by outlet forceps.
- 12.55% of cases delivered by emergency LSCS.
- Laparotomy for rupture uterus was done in 2.61% of cases.

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