

Original Research Article

A Study of Causes and Maternal Complications of Intrauterine Fetal Death in Tertiary Care Center

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ABSTRACT

Background: Intrauterine fetal death (IUFD) is a tragic outcome with emotional and clinical consequences, reflecting the quality of antenatal care.

Material and methods: A prospective observational study was conducted at C.U. Shah Medical College and Hospital, Gujarat, from May 2023 to May 2024. Out of 1923 total deliveries, 100 IUFD cases at ≥ 28 weeks gestation was analyzed for clinical presentation, risk factors, and outcomes.

Results: IUFD incidence was 3.73%. Most patients were aged 21–25 years and multiparous. Common symptoms included abdominal pain and decreased fetal movement. Major risk factors were pregnancy-induced hypertension, antepartum hemorrhage, and anemia. The majority delivered vaginally, with 23% undergoing cesarean section. Macerated stillbirths were more frequent, suggesting delayed recognition. Postpartum complications such as coagulopathy and breast issues were noted. Contraceptive acceptance postpartum remained low.

Conclusion: IUFD continues to be a major concern in maternal health. Early detection of high-risk pregnancies, consistent antenatal care, and postpartum counseling are essential to reduce its incidence and improve outcomes.

Keywords: Intrauterine fetal death, maternal morbidities, still birth, placental insufficiency.

INTRODUCTION

Intrauterine fetal death is a tragic experience for not only the couple but also to the treating clinicians. The perinatal mortality surveillance report (CEMACH) defined stillbirth as a baby delivered with no signs of life known to have died after 24 completed weeks of pregnancy.^{1,2} World Health Organization—a stillbirth refers to a dead born fetus which can either occur before the onset of labour (ante-partum death) or

during labour (intra-partum death) and is expressed per 1000 of total births. Stillbirth is defined as in utero fetal death at 20 weeks of gestation or greater^{3,4}. Intrauterine fetal death has profound emotional, psychiatric, and social effects on both parents and their families⁵. Prevalence of IUFD and stillbirths is the direct indicator of the quality of antenatal care in that society⁶. 2.6 million IUFDs happen annually worldwide. In India, 22 IUFD per 1000 live births. During the study period, 1923 deliveries were

recorded, with 100 cases of intrauterine fetal death (IUFD), resulting in an incidence of 3.73%. This problem needs to be critically analyzed, especially in our country, where inadequate antenatal care is compounded by inaccessibility to healthcare facilities. IUFD contributes largely to the perinatal mortality. Stillbirth is defined as a fetal death at or after 20 weeks gestation or with a birth weight of 350 grams or more. Globally, stillbirth rates vary widely, with higher rates in low- and middle-income countries. In the US, the stillbirth rate has plateaued since 2006, with approximately 23,595 stillbirths per year. The causes of stillbirth include unexplained stillbirth, which accounts for 76% of cases worldwide, placental abnormalities, diabetes, hypertension, infection, congenital anomalies, and substance abuse. Risk factors for stillbirth include advanced maternal age, obesity, substance abuse, multiple gestations, and late-onset prenatal care. Identifying and managing conditions like diabetes and hypertension can help prevent stillbirth. Induction of labor after 40 weeks may reduce stillbirth risk in some cases. Overall, stillbirth is a significant public health issue, particularly in low- and middle-income countries. However, the progress in reducing IUFD is slower than that of the neonatal deaths. This makes IUFD one of the major public health burdens that have been overlooked. IUFD is a tragedy not only to the family but also to the treating obstetrician¹⁰. It has been observed that the majority of the IUFD are preventable. In order to prevent deaths, it is crucial to understand the causes of death and to know the causes behind the deaths.

MATERIALS AND METHODS

The study was conducted at the Department of Obstetrics and Gynecology, C.U. SHAH Medical college and hospital, Surendranagar, Gujarat, from May 2023 to May 2024. It included 1923 total deliveries, with 100 cases of intrauterine fetal deaths (IUFDs). This prospective, observational, sectional study focused on antenatal women with IUFD at or beyond 28 weeks of gestation who delivered at the study hospital. Women with IUFDs at less than 28 weeks or those who delivered outside the hospital were excluded, as were cases where gestational age

could not be precisely determined and birth weight was less than 1,000 grams. Patient data was collected through a detailed history, clinical examination, and investigations, including complaints such as decreased fetal movements, vaginal leakage, bleeding, and fever. Obstetric history was recorded with general and systemic examinations were performed. Investigations included hematological tests, ultrasounds, and other necessary diagnostics. The study also looked at maternal risk factors, obstetric outcomes such as delivery method and complications, and postpartum care, including complications like postpartum hemorrhage (PPH), psychological effects, and the use of contraception. The aim was to analyze the clinical profile, maternal complications, and outcomes of IUFD at a tertiary care center.

RESULTS

Table-1: Clinical Status

Age Group (Years)	Number of Patients	(%)
<21	13	13%
21-25	40	40%
26-30	35	35%
31-35	10	10%
>35	3	3%
Parity		
Primigravida	34	34%
Multipara	63	63%
Grand Multipara	3	3%
Past Obstetric History		
No significant history	60	60%
History of Abortion	26	26%
History of IUFD	14	14%

Majority of cases (40%) were in the 21-25 age group, representing the peak reproductive age. 13% of cases were in those over 30, showing a decline in pregnancy-related issues with family planning. 77.5% of patients were registered, but many missed regular antenatal care, often due to social customs or refusal of necessary investigations. 62.5% of cases were

multiparous, indicating a potential link between increased parity and pregnancy complications. 60% had no significant history, while 26% had previous abortions, and 14% had a history of IUFD, emphasizing the need for careful monitoring in these cases.

Table-2: Gestational Age Wise Distribution

Gestational Age (Weeks)	Number of Patients	(%)
28-34	76	76%
35-37	15	15%
>38	9	9%
Total	100	100%

76% of IUFD cases occurred between 28-34 weeks of gestation.

Table-3: Clinical Symptoms Wise Distribution

Clinical Symptoms	Number of Patients	(%)
Loss of fetal movement	22	22%
Bleeding per vagina	13	13%
Leaking per vagina	10	10%
Abdominal pain	51	51%
Fever	4	4%
Total	100	100%

The majority (51%) presented with abdominal pain, followed by 22% with decreased fetal movements.

Table-4: Risk Factors Wise Distribution

Risk Factor	Number of Patients	(%)
Pregnancy-induced hypertension	23	23%
Antepartum hemorrhage	20	20%
Fetal growth retardation	12	12%
Anemia	15	15%
Oligohydramnios	4	4%
Abnormal Coed Placentation	6	6%
Others	20	20%

23% of cases had pregnancy-induced hypertension, followed by antepartum hemorrhage in 20%.

Table-5: Mode of Delivery Wise Distribution

Mode of Delivery	Number of Patients	(%)
Spontaneous vaginal delivery	32	32%
Induced vaginal delivery	45	45%
LSCS	23	23%
Total	100	100%

Table-6: Indication of LSCS Wise Distribution

Indication for LSCS	Number of Patients	(%)
Previous Caesarean	6	6%
Antepartum Hemorrhage	8	8%
Rupture of Uterus	1	1%
Total	23	23%

Indications for LSCS included APH (8%) and previous caesarean (6%). 62% of cases were macerated IUFDs, likely due to delayed presentation.

Table-7: Maternal Complications

Complication	Number of Patients	(%)
Postpartum Hemorrhage	7	7%
DIC	13	13%
Breast Complications	25	25%
Puerperal Sepsis	3	3%
Subinvolution	4	4%
Total	100	100%

Postpartum hemorrhage occurred in 7%, and breast complications were noted in 25%.

DISCUSSION

Intrauterine fetal death (IUFD) remains a critical indicator of maternal healthcare quality. This study reported an IUFD incidence of 3.73%, higher than the 2.2% noted by Shrestha J et al.¹¹, highlighting the need for improved antenatal care. The majority of IUFDs occurred in the 21–25-year age group (40%), aligning with peak reproductive age, similar to findings by Bisnoi BL et al.¹². Most patients were multiparous (63%), reflecting cumulative risk and possible gaps in healthcare utilization. IUFD was most common between 28–34 weeks (76%), similar to Shrestha J et al.¹¹, emphasizing the vulnerability of late gestation. Abdominal pain (51%) and loss of fetal movements (22%) were typical presentations. Compared to Jamal S et al.¹³, where decreased fetal movements were predominant, our study found pain more common—possibly due to delayed recognition. Key risk factors included PIH (23%) and APH (20%), consistent with Mandal A et al.¹⁴, both associated with placental insufficiency and fetal hypoxia. Labor was induced in 45% of cases, commonly using misoprostol (24%). LSCS was performed in 23%, mainly due to APH, prior cesarean, or failed induction. Delivery occurred within 8 hours of admission in 76%, showing timely intrapartum care. Cord abnormalities (6%) also contributed to fetal compromise. Postpartum issues included breast complications (25%), anemia (15%), and coagulopathy (13%).

CONCLUSIONS

Intrauterine Fetal Death (IUFD) is an unfortunate outcome of any pregnancy for everyone associated with that pregnancy, including the patient, her relatives, and the treating obstetrician. The incidence of IUFD in our institute is comparable to standard references. Though we can identify the risk factors and assign etiology in many cases of IUFD, not all IUFDs are preventable. Hypertension, antepartum hemorrhage, anemia, gestational diabetes, post-term pregnancy, and congenital anomalies are common causative factors. The majority of these causes can be diagnosed early and managed properly through

multidisciplinary efforts. Regular antenatal care, timely investigations, awareness about DFKC (daily fetal kick count) and treatment of underlying causes can prevent the majority of these unfortunate and unwanted outcomes.

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