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A STUDY OF RISK FACTORS, COMPLICATIONS AND MANAGEMENT OF INTRAUTERINE DEATH

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ABSTRACT Intrauterine fetal death is the most tragic event occurring to a mother as well as an obstetrician. Intrauterine fetal death (IUFD) is defined as the death of fetus more than 24 weeks of gestation and weighing more than 500 grams. It happens in about 1% of pregnancies. 2.6 million intrauterine deaths occur each year- at least 7,000 each day. Thus IUFD is an important problem in modern obstetrics that affect the obstetrician in charge, the patient and her family.**OBJECTIVES-**To determine risk factors for intrauterine fetal death and to study complication of intrauterine death. **MATERIAL AND METHODS-**Prospective study of intrauterine fetal death, carried out at tertiary care hospital. **RESULTS-** A hospital based prospective study was conducted with 680 patients to determine risk factors, complications and management of intrauterine death. There were 15,166 deliveries in our study period of which patients with IUFD was 680. Hence the incidence of IUFD in our study was 44.8 per 1000 live births. . In this study, the most common cause associated with IUFD was hypertensive disorders of pregnancy seen in 26% and among these 20% patients had preeclampsia and 6% presented in emergency with eclampsia. Also, the most common maternal complication was post partum haemorrhage (PPH) (10.6%) followed by disseminated intravascular coagulation (DIC) (8.2%)

KEYWORDS : Intrauterine fetal demise; pregnancy outcome; pregnancy trimesters; risk factors; stillbirth; IUFD

INTRODUCTION

Intrauterine fetal death is the most tragic event occurring to a mother as well as an obstetrician. Epidemiologically defining and reporting intrauterine fetal deaths was and continues to be a challenge. For that matter efforts to standardize the definition were taken. Intrauterine fetal death (IUFD) is defined as the death of fetus more than 24 weeks of gestation and weighing more than 500 grams.[1]The death is indicated by the fact that after delivery, the fetus does not breathe or show any other evidence of life; such as beating of heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. It happens in about 1% of pregnancies. 2.6 million intrauterine deaths occur each year- at least 7,000 each day.[2] Thus IUFD is an important problem in modern obstetrics that affect the obstetrician in charge, the patient and her family.

The cause of fetal demise is unknown in 25-60% of all cases. In cases where a cause is clearly identified, the cause can be attributable to fetal, maternal or placental pathology. Preexisting diabetes and hypertension are the two most commonly cited maternal diseases associated with fetal loss. The causes of IUFD, in a large percentage of cases remain unknown, also where extensive testing and autopsy have been performed. A regular and thorough antenatal check-up along with a conscientious adherence to the medical advice on the part of the patient would go a long way to describe its incidence to a much less disturbing figure. With the advent of USG, biochemical tests and medicines to cure medical conditions leading to fetal demise, it is quite feasible to salvage many fetuses. Recently, fetal medicine is evolving as an upcoming branch and there are ample modern facilities for antenatal fetal well-being assessment. In 21st century, fetus is considered as a separate patient, though in utero. This has been possible due to invent of ultrasonography and its implications in obstetrics.

It is important to find out the cause of IUFD. If the cause of an IUFD can be identified, the family will know about the possibility of recurrence and can seek appropriate medical treatment to prevent recurrence. Hence the present study was done at our tertiary care centre to determine risk factors, mode of delivery depending upon maternal conditions, complication of intrauterine death and abnormalities in fetus, placenta and cord after delivery of intrauterine fetal death.

AIMS AND OBJECTIVES

1. To determine risk factors for intrauterine fetal death.
2. To decide upon the mode of delivery depending upon maternal conditions.
3. To study complication of intrauterine death.
4. To study abnormalities in fetus, placenta and cord after delivery of intrauterine fetal death.

MATERIAL AND METHODS

Type of Study:-Prospective study of intrauterine fetal death, carried out at tertiary care hospital.

Sample size : All cases of intrauterine fetal death reported at our tertiary care hospital in the study conducted from 1st October 2017 to 31st March 2019

METHODOLOGY

The study was done at our tertiary care centre in the Department of Obstetrics and Gynecology, after taking Written Informed Consent from the patients. Once the patients were enrolled for the study, a thorough history and physical examination was done as per proforma. Fetal outcomes were recorded. Also basic blood investigations were sent to identify any complications.

RESULT AND DISCUSSION

A hospital based prospective study was conducted with 680 patients to determine risk factors, complications and management of intrauterine death. There were 15,166 deliveries in our study period of which patients with IUFD was 680. Hence the incidence of IUFD in our study was 44.8 per 1000 live births. A rate higher than the national average of 38 stillbirths per 1000 live births. One reason of higher IUFD at our center could be because of selection bias due to it being a tertiary care referral center and all major obstetric complication detected 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 in rural areas around it.

The Increased risk of fetal death is present amongst the teenagers and elder women. In our study, however, the fetal deaths were more in the age group of 21–25 years. This is because most of the women in India complete the family before 30 years of age. Majority of the patients (48.1%) were in the age group of 21-25 years followed by 25.9% in the age group of 26-30 years.

Majority of patients were from lower class (45%). 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.

234 (34.4%) patients were booked cases while 446 (65.6%) patients were unbooked cases. Patel S et al[3] and Korde NV et al[4] had also reported a high incidence of 70% and 84.9% respectively of IUFD in unbooked patients as compared to booked patients. In patients who come for regular antenatal checkups, complications can be timely

diagnosed and treated leading to better pregnancy outcome.

Distribution of patients according to Parity was 272 (40%) patients were primigravida while 408 (60%) patients were multigravida.

In Nottingham hospital[5], Increased BMI was positively associated with stillbirths. But in our study, 83 (12.2%) patients were underweight while 473 (69.6%) patients had BMI in the normal range. 85 (12.5%) and 39 (5.7%) patients were overweight and obese respectively.

The most common presenting complaint was loss of fetal movements (36.8%) followed by P/V bleeding (20%), abdominal pain (8.2%) and leaking per vaginum (1.9%). 236 (34.7%) patients had no complaints. More than half of the recorded cases in Nottingham hospital study[5] (54.7%) the complaint was of reduced or absent fetal movements.12.5% of women attended with symptoms of labor and fetal heart rate were not present.

Majority of IUFD cases was found in gestational age 29-34 weeks (57.4%). 30% cases was found in gestational age 35-40 weeks, 10% cases in gestational age <28 weeks and 2.6% cases in >40 weeks.

In our study history of previous IUD was seen in previous history of IUFD in 4.7% similar to study by Singh N et al[6] in which it was 4.05% cases. In a study done by Shyam P[7] in 2016 incidence of IUD in woman with past history of abortion was 11.32% which is similar to our study (10%).

Table 1: Distribution of patients according to Obstetric history

Obstetric history	N	%
History of one or more stillbirth	32	4.7%
History of one or more abortions	68	10%

Over the years the causative factors responsible for IUFD have changed. There was an observation that the pattern of etiologies are also changing[8].Some causes incriminated in fetal wastage like syphilis, Rh isoimmunization thirty years ago, are no longer significant[9]. 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: 10,1000births][8]. In this study, the most common cause associated with IUFD was hypertensive disorders of pregnancy seen in 26% and among these 20% patients had preeclampsia and 6% presented in emergency with eclampsia. Choudhary A et al[1] reported PIH causes IUFD in 30% and abruption placenta in 10.4% cases which is comparable to our study. Korde NV et al[10]reported the most common cause of IUFD as abruptio placenta seen in 21.9% and PIH-eclampsia together in 18.7% cases. In the present study GDM accounted to 6.2% of the IUFD which is similar to study by Choudhary A et al[1].Nutritional deficiency and anemia are leading cause of poor pregnancy outcomes and the majority of our patients had anemia. Anemia was underlying factor in 14% cases in our study.

Table 2: Distribution of patients according to Etiology

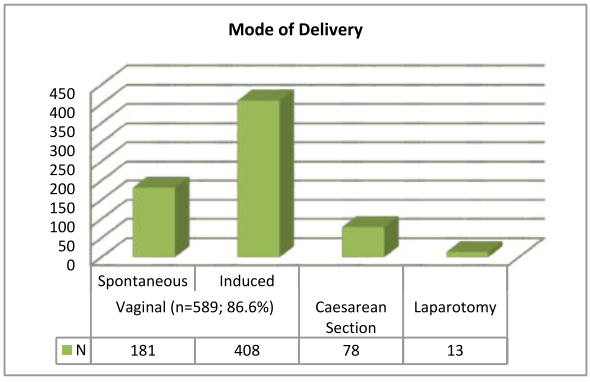
Etiology	N	%
Hypertensive disorders	177	26%
Antepartum Hemorrhage (placental abruption+ placenta praevia)	132	19.4 %
Severe anemia	95	14%
Diabetes mellitus	42	6.2%
Congenital anomaly	60	8.8%
Postdatism	18	2.6%
Infection	15	2.2%
Cord accidents (Cord prolapsed, loop of cord around neck)	24	3.5%
Ruptured uterus	13	1.9%
Rh incompatibility	2	0.3%
Medical disorders	6	0.9%
Unidentified causes	136	20%

The incidence of CMF was 8.8% which was also similar to that reported from other studies[11,4]. Poor attendance of antenatal care and lack of folic acid consumption may explain why these women could not avail themselves of this nutritional supplement. Congenital malformation of fetus can be diagnosed by ultrasonography in early pregnancy and medical termination of pregnancy can be done. So anomaly scan can significantly contribute to decrease the burden of stillbirth.

Despite wide research and treatment modalities available many of the stillbirths remain unexplained. The percentage of unexplained fetal demise has stayed constant over the years. In present study, 20% were unexplained IUFD. Singh N et al[6] found 33% unexplained fetal deaths in their study.

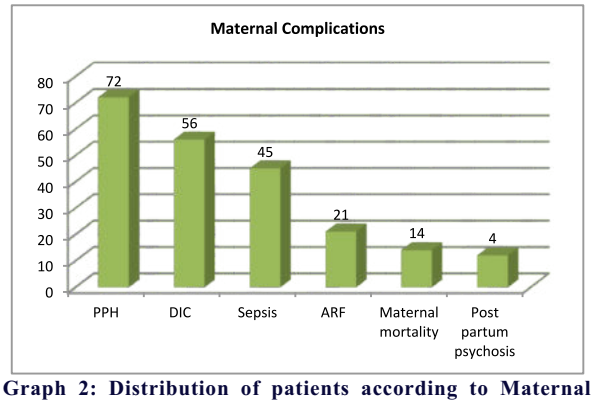
In our study, the termination of pregnancy was induced by cerviprime gel in 227 (33.4%) cases and misoprostol and oxytocin drip in 302 (44.4%) and 151(22.2%) cases respectively. Majority of the times it was done using misoprostol as in many studies it is proven more effective. But it is avoided or used in very low doses in cases of scarred uterus as there as chances of scar rupture.

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. In our study the incidence of rupture uterus was 1.9%.whereas it was very high in the study in northern India which accounted for 10%. In current study, mode of delivery was vaginal route in 86.6% patients. Rest of the patients were delivered by caesarean section 11.5% and in cases of rupture uterus (1.9%) by exploratory laprotomy.



Graph 1: Distribution of patients according to Mode of Delivery

The most common maternal complication was post partum haemorrhage (PPH) (10.6%) followed by disseminated intravascular coagulation (DIC) (8.2%), sepsis (6.6%), acute renal failure (ARF) (3.1%), maternal mortality (2.1%) and post partum psychosis (1.8%).



Graph 2: Distribution of patients according to Maternal Complications

Most of the stillbirths were fresh (70.6%) that indicates that judicious antenatal care could have prevented it. Macerated stillbirth accounts for 29.4% cases. 360 (53%) neonates were male while 320 (47%) neonates were female in our study.

The most common placental pathology of IUFD was retroplacental clot (23.4%) followed by infarction (12.5%) and calcification (6.6%). The unidentified placental causes of IUFD was 57.5%.

In the present study, umbilical cord accidents like, strangulation of fetus with cord around neck, and prolapse, accounted for total 3.5% of intrauterine fetal demise. A true knot of the umbilical cord was seen in 0.6% cases and 3.5% had tight cord around neck or prolapse in this study.

CONCLUSION

Stillbirth is a valuable index to measure the level of antenatal and intranatal care. By proper antenatal check-ups, the high-risk cases associated with poor outcomes can be identified. So the purpose of this study is to analyze the maternal conditions associated with intrauterine fetal demise and to find the preventable causes of fetal death. Also if intrauterine fetal demise occurs, it should be managed effectively as to avoid life threatening complications which are more commonly associated with intrauterine fetal demise.

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