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RESEARCH ARTICLE

A RETROSPECTIVE STUDY OF 50 CASES OF INTRAUTERINE FETAL DEATH AT TERTIARY CARE CENTRE

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ABSTRACT

Introduction: This study was undertaken to identify the maternal and fetal factors associated with intrauterine fetal death and its complications. This will be helpful in counselling of parents as well as formatting preventing measures.

Material and Method: This is a retrospective study carried out over a period of one year at a tertiary care hospital. 50 cases of IUFD were studied and their details were collected from the hospital records. Inclusion criteria was all IUFD greater than 20 weeks of gestation.

Results: It was observed that 36 (72%) were Emergency admission and 14 (28%) were booked cases from the total 50 cases. The incidence was maximum, 22 cases (44%) in the 26-32 gestational weeks. In 16 (32%) number of cases no identifiable cause of IUFD was found. IUFD occurred in 9 (18%) cases APH and 8 (16%) PIH. Other causes IUFD were GCA (12%), oligohydramnios (8%), diabetes (4%), fever (4%) and MSL (4%). Vaginal delivery occurred in 42 (84%) and LSCS required in 8 (16%).The most common complications associated with IUFD is psychological upset (22%). DIC, ARF, sepsis and PPH are rare but serious complications and majority of them occurred because of associated medical comorbidities.

Conclusions: A significant proportion of IUFD can be preventable by proper antenatal care, health education to community about warning signs.PIH and APH accounted for most common causes of IUFD. In cases where cause is not identifiable, there should be some easily available and convenient investigations to find the cause.Proper counselling of parents is of root value in IUFD.

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INTRODUCTION

Intrauterine fetal death is a tragic experience not only for the pregnant lady and her family but also for the treating clinician. The definition of fetal death adopted by the Centers for Disease Control and Prevention National Center for Health Statistics is based on the definitions recommended by the World Health Organization (MacDorman, 2012). This definition is as follows:

"Fetal death means death prior to complete expulsion or extraction from the mother of a product of human conception irrespective of the 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 other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps." (24th Edition Williams Obstetrics). There is no uniformity acceptedinternationally aboutbirth weight and gestationalage criteria for reporting fetal death.Fetal mortality data from the National Vital Statistics system are usually presentedfor fetal death at 20 weeks of gestation or older (MacDorman, 2012) (24th Edition Williams Obstetrics). Death of fetus less than 20 weeks of gestation has got a distinct etiology and termed as abortion (Text book of Obstetrics). Ante-partum fetal death contributes to about two thirds of perinatal mortality (Richardus). Prevalence of perinatal deaths in a society is the direct indicator of the quality of antenatal care in the country (Richardus). The prevalence of IUFD has been decreased in developed countries but it remains very high in underdeveloped and developing countries (Choudharyb, 2014). The major factors responsible are lack of prenatalcare, inaccessible or limited health care facility. By proper checkups, the high-risk cases can be identified and IUFD can be prevented in many of them by timely intervention. Still there are number of cases of IUFD which remain unexplained. This study was carried out at a tertiary care hospital to identify causes of IUFD in patients having more than 20 weeks of gestation and to suggest

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possible preventive measures to decrease the further incidence of IUFD.

MATERIALS AND METHODS

This study was conducted at a tertiary care hospital and medical college in the Department of Obstetrics and Gynecology over a period of 1 year where total 50 cases of IUFD were retrospectively studied.Intrauterine fetal deaths above 20weeks of gestation were included. Detailed history of the patient was collected from the hospital records- such as age, parity, emergency or a booked case, associated risk factors such as PIH, APH, Gestational Diabetes Malietus (GDM), oligohydramnios and congenital anomalies.Data regarding associatedcomplications and mode of delivery were studied.

Observations

Total 50 cases of female with IUFD fetus were studied which were delivered over the period from June 2016 to May 2017 at our hospital.

RESULTS

72% of patients with IUFD were emergency cases and 28% were booked cases which suggest that patients who did not seek antenatal care have higher incidence of IUFD and associated complications (Table 1). Incidence was maximum in the gestational age group of 26-32weeks(44%).It may be because majority of cases were of abruption or hypertensive disorder of pregnancy which lead to utero-placental insufficiency and Doppler changes at early stage of pregnancy (Table 2). In the study 32% women had IUFD in which no cause is identified. The reason for high incidence of unknown aetiology may be more numbers of emergency cases (72%) which didn't have any antenatal records or investigations available. All of them after delivery did not give consent for further investigations including autopsy of dead new-born (Table 3).

Table 1. Emergency or booked cases

Type	No. of Cases	Percentage
Emergency cases	36	72.00%
Booked cases	14	28.00%
Total	50	100.00%

Table 2. IUFD and gestational age

Gestational Age (in weeks)	No. of Cases	Percentage
20-25	2	4.00%
26-32	22	44.0%
33-36	18	36.0 %
> 37	8	16.0%
Total	50	100.00%

Table 3. Causes of IUFD

Cause	No of Case	Percentage
UNKNOWN	16	32.0 %
APH	9	18.0 %
PIH	8	16.0 %
GCA	6	12.0 %
OLIGOAMNIOS	4	8.0 %
GDM	2	4.0 %
FEVER	2	4.0 %
MSL	2	4.0 %
MEDICAL ILLNESS	1	2.0 %
Grand Total	50	100.0 %

In present study, 84% women were delivered vaginally and only 8required cesarean delivery. LSCS was performed in cases with history of two or more LSCS and APH where immediate termination required to prevent complications and to decrease maternal morbidity (Table 4). Among 42 vaginal births, 16 (38.1%) were spontaneously delivered. 26 (61.9%) patients required induction for maternal safety and prevention of complications. (Table 5) LSCS was done in 8 patients where most common factor associated was APH. In these cases, immediate termination of pregnancy was desirable for better maternal outcome. (Table 6) In about 22% females experienced psychological upset post-delivery. In our study, we observe that apart from managing complications due to various etiology, psychological support to the patient was equally important. Proper counseling and proper advices regarding next pregnancy should be given to all these patients (Table 7).

Table 4. Mode of Delivery

Mode of Delivery	No. of cases	Percentage
Normal Delivery	42	84.0 %
LSCS	8	16.0 %
Total	50	100.00 %

Table 5. Need of induction

Vaginal delivery	No. of cases	Percentage
Spontaneous	16	38.1 %
Induced	26	61.9 %
Total	42	100.0 %

Table 6. Indications of Lscs

Indications of LSCS	No. of cases	Percentage
PREV CS+ APH	2	25.0 %
PREV 2CS+ APH	2	25.0 %
APH	1	12.5%
PIH	1	12.5 %
PREV CS+PIH	1	12.5 %
PREVIOUS 2 CS	1	12.5 %
TOTAL	8	100.0 %

Table 7. Complications

Complications	No. of cases	Percentage
Psychological upset	11	22.0%
DIC	2	4.0%
Sepsis	1	2.0%
PPH	2	4.0%
ARF	2	4.0%

DISCUSSION

In present study majority of admissions were emergencycases and had not taken any antenatal visits.So definitely antenatal care and use of all available health care facilities can reduce IUFD occurrence.It is well established fact that adequate ANC is associated with better pregnancy outcome (Richardus). In the majority cases, IUFD occurred before 32weeks. Chitra *et al* and V S Prsanakumar Reddy *et al* (Prasannakumar Reddy, 2014). Reported 57.8% and 56.09% of between 26-31 weeks respectively. Even with all of the advances made to date it has been estimated that 12-50% of IUFD has no etiology identifiable (Incerpi, 1998). Neetu Singh *et al*. (Neetu, 2016), also reported 33% IUFD which are unexplained. study by

Incerpi *et al*. (Incerpi, 1998), showed that autopsy reduced the number of unexplained IUFD. Common causes of IUFD were PIH and APH. In the study by Kumar *et al*. (Lawn, 2011). PIH was the most common cause of IUFD in 19% and accidental hemorrhage in 9.8%. Al Kadri *et al*. (Al Kadari, Hanan, 2012). reported 3 fold increases risk of IUFD in patients having PIH and abruptio placenta. In study by Sharma S, Sidhu H, Kaur S, PIH accounted for 19.6% cases of IUFD. 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 12% cases of congenital malformation lead to IUFD. Anjali C *et al* (2014) and Kumar *et al*. (2011) had reported IUFD due to congenital malformation in 10.5% and 10% respectively. Mode of delivery is always a great concern for the obstetrician. In the present study, 42(84%) delivered vaginally, compared to Korde NV *et al* (2014) and Chitra K *et al*l (Chitra, 2001) who had reported vaginal delivery in 73.1% and 89.4% respectively. Surgical intervention required in 8(16%) compared to 12.9% in Hooja Nupur *et al* (Sharma, 2016). Indication for caesarean section was previous one or two cesarean section and previous cesarean section with severe antepartum hemorrhage. Most common complications associated with IUFD which is even neglected by many of health professionals is psychological upset, seen in 22% of cases with IUFD. Singh N *et al* (Singh, 2013), reported psychological upset in 22.63%.Proper counselling of parents should be done regarding future pregnancy and to keep space between pregnancies as patient needs some time to come out from stress. Other complications associated with IUFD were mostly due to underlying etiologies like APH and PIH. DIC present in 4.7% of cases. All of them required transfusion of blood components. In most cases, more than one component was given. Thromboplastins released from blood clots, damaged placenta and dead fetus activates coagulation cascade and that leads to DIC. These cases were managed by treatment of underlying condition and by maintaining perfusion to vital organs, transfusion of blood and blood components. Availability of multispecialty and intensive care helps in management of these patients. Acute Renal Failure (ARF) was encountered in 4.7% of cases presented with abruption placenta which were managed by hemodialysis. Septicemia was present in 2.3% compared to 1.68% in study by Singh N *et al* (Singh, 2013), and managed by intravenous fluid and higher antibiotics.

Conclusion

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.

In many cases, there was no cause identifiable. There should be some easily available and convenient method to find out hidden cause of IUFD. Parents should be counselled for further detailed investigation and to give consent for autopsy examination. Labour is either induced or augmented to reduce complications and LSCS is performed for immediate termination of pregnancy to prevent maternal morbidity. Complications are mostly related to obstetrics and medical comorbidities like PIH and APH, which are also the leading cause of IUFD.

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