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Research Article

Antenatal Intrauterine Fetal Demise: A Retrospective Observational Study in a Tertiary Care Hospital -

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ABSTRACT

Background: Intrauterine Fetal Death (IUFD) is a traumatic event for the parents and obstetrician. Identification of risk factors/ causes will be helpful in counselling of parents and formulating preventive measures. The objectives of current study were to identify the causes of intrauterine fetal death, associated complications and to suggest preventive measures.

Methods:

Study design: This was a retrospective study carried out over a period of 10 months from September 2018 to June 2019 at a tertiary care hospital. Intrauterine fetal death was defined as fetal death beyond 20 weeks of gestation and/or birth weight ≥ 500 gms. Maternal and fetal records were analysed. Causes of IUFD and associated complications were studied.

Results: Out of total no of births 21,693 during the study period, 565 IUFD occurred. Hence, the incidence of IUFD was 26 per thousand births. Majority of cases were multigravida 59.1% (*n* = 334). Majority 69% (*n* = 395) were less than 30 years old with gestational age of 28-36 weeks in 50.9% (*n* = 288). No identifiable cause was found in 22.8% (*n* =128) where as cause was identified in 77.2% (*n* = 437). IUFD occurred in 17.27% cases of hypertensive disorders, 9.9% cases of abruption, 9.3% cases of congenital malformation, 6.5% oligohydramnios, 5.4% GDM, 3.5% anaemia etc. 76% delivered vaginally, 23% required caesarean section, 0.5% undergone hysterectomy. 10.6% of patients required blood transfusion, 4.42% had hospital stay more than 7 days, 2.6% developed deranged coagulation profile and 2.4% had PPH.

Conclusion: The leading causes of IUFD are unexplained, abruption, Gestational hypertension, congenital malformation, oilgohydramnios, GDM. Majority of the cases were referred and they did not have regular antenatal checkups. Many of the intrauterine fetal deaths are preventable by educating the community and patients about the importance of regular antenatal checkups, about warning signs during antenatal period, hospital delivery and early referral.

Keywords: Intrauterine Fetal Death (IUFD); Unexplained fetal deaths, Stillbirths

INTRODUCTION

Intrauterine Fetal Death (IUFD) is a distressing situation for not only the patient/ couple but also to the treating obstetrician [1]. IUD definition includes deaths beyond 20 weeks of gestation or birth weight ≥ 500 gms (WHO) [2]. The Perinatal Mortality Surveillance Report (CEMACH) defined stillbirths as a baby delivered with no signs of life after 24 completed weeks of pregnancy. According to world health organisation a stillbirth refers to a dead born fetus which can either occur before the onset of labour (antepartum death) or during labour (intrapartum deaths) and is expressed as per 1000 of fetal births. In India, the incidence of IUFD is 22 per thousand live births. Intrauterine fetal death is a significant contributor to perinatal mortality in developing countries although improved antenatal care, advanced techniques of perinatal diagnosis and better intrapartum monitoring has reduced the incidence of IUFD. The study was carried out in tertiary care hospital to identify the causes of IUFD, to study maternal complications and to suggest possible preventive measures to decrease the incidence.

METHODS

This was a retrospective study conducted in a tertiary care hospital from September to June. Intrauterine fetal deaths above 20 weeks period of gestation and or above 500 gms of weight were included. Detailed history of the patient was collected from the hospital records such as age, parity, associated risk factors such as preeclampsia, GDM, Rh negative pregnancy, oligohydramnios etc. Data regarding the mode of delivery and the baby details such as birth weight, macerated or fresh stillbirth, placental and cord pathology were recorded.

STATISTICAL ANALYSIS

All the data analysis was carried out employing Microsoft excel data analysis. ALL the quantitative analysis variables were expressed as mean and standard deviation. Qualitative variables were expressed as percentage.

RESULTS

During the period of this study total number of deliveries was 21,693. Out of which 565 were intrauterine fetal deaths. Incidence of intrauterine fetal deaths in our hospital was 26 per 1000 live births. Majority of the patients were aged < 30 years (*n* = 395, 69%), the period of maximum reproducibility. Mean age was 28 years with standard deviation of 4.16. Majority of cases were multigravida (n = 334, 59.1%) and 40.8% were pimigravida (*n* = 231). It was found that majority of IUFD (50.9%) were from 28-36 weeks. 6.5% (*n* = 37) had IUFD at < 28 weeks of gestation and 42.4% (*n* = 240) has had term IUFD 66%, (*n* = 374) patients presented with history of absent fetal movement, while 6.3% (*n* = 36) came with decreased fetal movements, 4.6% (*n* = 26) presented with pain lower abdomen, 4.7% (*n* = 27) with leaking per vaginum/ labour pains, 9.2% (*n* = 52) with bleeding per vaginum, 1.2% (*n* = 7) were postdated, 7.6% (*n* = 43) were USG documented anomalous fetuses. (Table 1).

As shown in Figure 1, out of 565 patients no identifiable cause was found in 22.8% (*n* = 128) of IUFD, 9.7% (*n* = 55) had gestational hypertension, 2.8% (*n* = 16) preeclampsia, 4.07% (*n* = 23) eclampsia, 0.7% (*n* = 4) chronic hypertension, 9.9% (*n* = 56) abruption, 0.5% (*n* = 3) previous h/o abruption, 3% (*n* = 17) placenta praevia, 1.9% (*n* = 11) obstructed labour, 3.5% (*n* = 20) IUGR, 9.3% (*n* = 53) congenital malformation, 6.5% (*n* = 37) oligohydramnios, 3.6% (*n* = 18) cord accidents, 3.3% (*n* = 19) true knot/ tight turns of cord around neck, 5.4% (*n* = 31) GDM, 1.5% (*n* = 9) postdated pregnancy, 3.5% (*n* = 20) anaemia, 1% (*n* = 6) h/o prev. IUFD, 0.5% (*n* = 3) thrombocytopenia, 1,7% (*n* = 10) hypothyroidism, 2.3% (*n* = 13) Rh-ve pregnancy, 1.4% (*n* = 8) jaundice, 1.5% (*n* = 9) rupture uterus.

In this study as shown in Table 2, it was observed that we observed that 61% fetuses were non-macerated as compared to 40.3% macerated fetuses. It was observed that 0.7% (*n* = 4) fetuses had true knot of cord whereas 3.3% (*n* = 19) had tight cord around neck.

DISCUSSION

In the present study incidence of IUFD was 26% which is in accordance to Balu D, et al. in which incidence of IUFD was 29.2 per thousand [3-5].

In the present study majority of the cases with IUFD were multigravida (59.1%). This is in accordance to the study by Korde NV, et al. in which 51.6% of the multi had still births and Balu D, et al. in which 60.8% patients were multigravida [4,5]. 69% of patients were aged less than 30 years in our study which is similar to the study conducted by Balu D, et al. in which 80% of patients in the age group of < 30 years. 50.9% of IUFD occurred between 28-36 weeks period of gestation which is comparable to study by Balu D, et al & by Patel S, et al. in which 55% IUFD occurred between 28-36 weeks & 62.5% occurred between 25-32 weeks of gestational age respectively [5,6]. In our study 66% of patients presented with absent fetal movements while 6.3% had come with decreased fetal movements. In study by Balu D, et al. 75.8% of the patients presented with absent fetal movements and 10% with decreased fetal movements [5]. In our study, history of previous IUFD was seen in 8.1%. Studies conducted by Balu D, et al and Singh N, et al. showed that 3.3% & 4.05% cases

Table 1: Maternal characteristics.

	No. of cases	%age	
1.Maternal age			Mean 27.7
≤ 30years	395	69.9%	SD 4.166
> 30 years	170	30.08%	CI 0.344
2. Parity			
Primi	231	40.8%	
Multi	334	59.1%	
3. Period of gestation			M 34.15
≤ 28 weeks	37	6.5%	SD 4.3
28 weeks 1 day - 36 weeks	288	50.9%	CI 0.35
36 weeks 1 day -42 weeks	240	42.4%	
4. Complaints			
Absent foetal movements	374	66.4%	
Decreased foetal movements	36	6.3%	
Pain lower abdomen	26	4.6%	
Leaking / Labour pains	27	4.7%	
Bleeding per vaginum	52	9.2%	
Post dated	7	1.2%	
USG documented anomalous fetus	43	7.6%	
5. Past history			
H/O abortion	68	12%	
H/O prev. IUFD	46	8.14%	
H/O of prev. ectopic	2	0.3%	

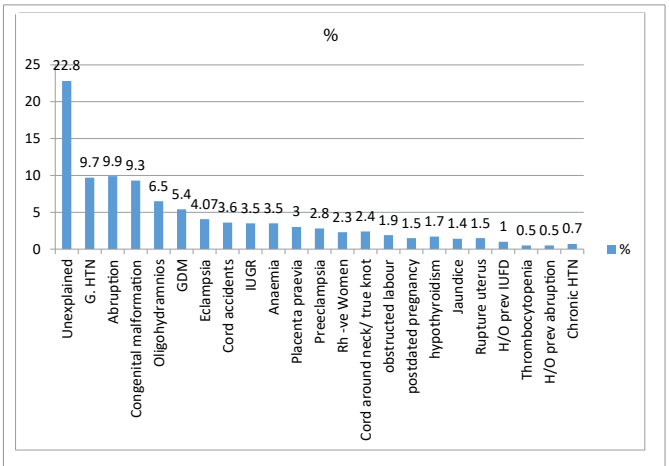

Figure 1: Maternal causes.

Table 2: Fetal characteristics.

Fetal Characteristics	No. of cases	%age	
1. Male sex	304	53.8%	
2. Female sex	261	46.1%	
3. Foetal weight			Mean - 2.12
< 0.5	15	2.6%	SD - 0.7
0.5-0.99	26	4.6%	CI -0.06
1-1.49	64	11.3%	
1.5-1.99	62	10.9%	
2-2.49	173	30%	
2.5-2.99	153	27%	
≥ 3	72	12.7%	
4. Gross features			
Macerated	228	40.3%	
Not macerated	337	59.6%	
5. True knot in cord	4	0.7%	
6. Loops of Cord around neck	19	3.3%	

Table 3: Mode of deliver.

Mode of delivery	No. of cases	%age
1. Vaginal	427	76%
2. Caesarean	135	23%
3. Hysterotomy	3	0.5%

As shown in Table 3, 76% (*n* = 427) were delivered vaginally, 23% (*n* = 135) required caesarean section and 0.5% (*n* = 3) required hysterotomy.

Table 4: Maternal complications.

Complications	No. of cases	%age
1. Blood transfusion	60	10.6%
2. ICU admission	16	2.8%
3. Hospital stay > 7 days	25	4.42%
4. Sepsis	10	1.7%
5. Deranged coagulation profile	15	2.6%
6. PPH	14	2.4%
7. Postpartum psychosis	1	0.19%

As shown in Table 4, 2.6% (n = 15) mothers developed deranged coagulation profile, 2.4% (n = 14) had PPH, 1.7% (n = 10) had sepsis, 2.8% (n = 16) required ICU care, 4.42% (n = 25) had prolonged stay in the hospital for more than 7 days, 10.6% (n = 60) required blood transfusion and 0.1% (n = 1) had postpartum psychosis.

had previous history of IUFD respectively [5,7]. In present study 12% had previous history of abortion which is similar to study by Patel S, et al. in which 16.2% had past history of abortion [6].

In present study, unexplained IUD occurred in 22.8% cases compared 21.7% in Balu D, et al. 38.7% in Patel S, et al study & in Singh N, et al. it was 33% [5]. 17.2% of cases had hypertensive disorder including gestational hypertension, preeclampsia, eclampsia and chronic hypertension in present study. 33.7% had PIH and eclampsia in a study conducted by Patel S, et al [6]. Among the placental causes, 9.9% were due to abruption and 3% due to placenta praevia. This is in accordance to study conducted by Singh N, et al [7] in which abruption was the cause in 6.75% and placenta praevia in 3.37% and similar results were shown by Jahanfar Sh, et al. in which 9.45% of IUFD were having major congenital anomalies [8]. But was in contrast to the study conducted by Tariq where congenital malformation accounted for 25.2% cases of IUFD [9]. In present study GDM accounted for 5.4% of the IUFD which is similar to study by Anjali C, at al [10]. In present study anaemia accounted for 3.5% cases of IUFD in contrast to Patel S, et al & Anjali C, et al. where anaemia was cause for 11.2% & 16% IUFD respectively [6,10]. Intrauterine Growth Restriction (IUGR) is another risk factor for fetal death. In present study 3.5% of cases had IUGR. Al Kadari, et al. reported ten folds increased risk of IUFD in patients having IUGR [11]. Cord complications like cord prolapse/ tight cord around neck/ true knot were seen in 6% of patients in our study which is similar to study by Singh N, et al. in which the cord complications were seen in 4.72% of patients [7].

In this study 53.8% of the dead fetuses were males and 46.1% were females. In the study of Safarzadeh A, there were 50.8% male dead fetus & 49.1% were female dead fetus [12]. In a study by Balu D, et al. 51.6% of the dead fetuses were males & 48.6% females [5]. 61% were fresh still births and 40.3% were macerated as compared to the study by Katherine J Gold, et al. in which 70% were fresh and 30% macerated [13].

76% had vaginal delivery in our study which is similar to Chitra K, et al. who had reported vaginal delivery in 73% [14]. Caesarean section was required in 23% & hysterotomy in 0.5% cases.

Duration of hospital more than 7 days was seen in 4.42% in our study which is similar to study by Balu D, et al. in which 4.2% had a prolonged hospital stay [5]. 2.6% had deranged coagulation profile which is similar to Singh N, et al. (1.68%) [7]. 2.4% had PPH which is similar to Singh N, et al (2.36%) [7]. 1.7% sepsis and 2.8% required ICU care in this study. 10.6% patients received blood transfusions because majority of them were severely anaemic which is in contrast to Singh N, et al. [7] study in which 53% patients received blood transfusion [15].

CONCLUSION

The purpose of this study was to understand the contributing factors and to seek measures to prevent recurrence by proper and regular antenatal care, early detection and treatment of the causative factors. Health education should be given to patients and community regarding importance of regular antenatal care, warning signs during antenatal period, hospital delivery and early referral in case of high risk factors.

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