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Original Research Article

A retrospective study of intrauterine fetal demise in a tertiary care center

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ABSTRACT

Background: Intra uterine foetal death is an emotional distress for mother, her family and for the obstetrician also. Proper planning, seeking antenatal services reduces this. Objectives of current study were to determine incidence rate of intrauterine foetal death and to evaluate the maternal and foetal factors responsible for intrauterine foetal death.
Methods: This retrospective observational study was conducted in a tertiary care hospital from November 2022 to April 2022. The data was collected from previous records of 60 IUFD cases with 1576 births. Age, parity, gestational age, aetiology was studied.
Results: The most common maternal cause of IUFD was pre-eclampsia and eclampsia (18.33%) followed by anaemia (11.67%). The most common foetal cause was IUGR (6.67%), and the most common placental cause was placental previa (8.33%).
Conclusions: In this study, incidence of IUFD was 38.1/1000 live births. To prevent IUFDs, all the antenatal cases have to be booked for better care of antenatal period and management of any complications.

Keywords: IUFD, Incidence, Aetiology, Pre-eclampsia

INTRODUCTION

Intra uterine foetal death (IUFD) is a devastating experience for both the mother and the family, and it continues to be a challenge for obstetricians. Although advancements in antepartum and intrapartum care have reduced the incidence of stillbirth, it is still a significant contributor to perinatal mortality. Every year, nearly 3.3 million IUFDs occur world - wide, nearly as many as postnatal deaths, but received less attention. Of them 97% occurring in developing countries.[1] Foetal death occurring after 20 weeks of gestation is called as intrauterine foetal death (IUFD). [2] It is further subdivided into early and late IUFD. Early IUFD occurs when the foetus dies before 24 weeks of pregnancy, and late IUFD occurs when the foetus dies after 24 weeks.[2] According to WHO, a "booked case" is when a pregnant woman has had at least three antenatal check-ups after being registered and confirmed to be pregnant. All others with no earlier antenatal visits are treated as un-booked case".[3] Even after thorough testing and autopsy reports, the contributing factors of IUFD remains uncertain in most of the cases. It is crucial to look into the cause of IUFD. If the reason of an IUFD is recognized, it is possible to initiate necessary treatment to avoid recurrences. The recognition of IUFD causes will aid in both counselling parents and developing preventive measures.[4] IUFD can be used to assess the level of antenatal and intra natal care. As a preventive measure, health education is given to promote the utilization of available antenatal care services, family

planning, and genetic counselling.[5] This study was conducted to determine the incidence and causes of IUFD.

Objectives

Objective of current study was to determine incidence rate of intrauterine foetal death and to evaluate the maternal and foetal factors responsible for intrauterine foetal death.

METHODS

This retrospective observational study was conducted in a tertiary care hospital at RL Jalappa Hospital, Kolar from November 2022 to April 2022. The data was collected from previous records of 60 IUFD cases with 1576 births. All the women delivered in this hospital at or after 20 weeks of gestation with Intrauterine Foetal Demise or Fresh Still Birth were enrolled. Parameters such as maternal age, parity, and probable cause for IUFD (if found on gross examination, pre-existing maternal or foetal complication diagnosed during pregnancy), booked case or un-booked case were studied. Data was analysed with Microsoft excel, and the results were expressed in frequency and percentage. Statistical package of social Sciences (SPSS) version 25.0 was used as a statistical tool.

Inclusion criteria

All the women with intrauterine foetal demise with gestational period beyond 20 weeks to full term pregnancy and given informed consent were included.

Exclusion criteria

Babies born below 20 weeks of gestation, Foetus weighing below 500 gms and mothers who did not give informed consent were excluded.

RESULTS

In the present study, 45% of cases were seen in 21-25 years, 33% of cases were seen in 26-30 years, 12% of cases were seen in >30 years, and 10% of cases were distributed in <20 years (Table 1, Figure 1). In this study, 90% of antenatal cases were un-booked and only 10% of cases were booked (Table 1, Figure 2). In the present study, 33.3% of cases were of G1, 48.3% of cases were of G2, 13.3% of cases were of G3, 3.3% of cases were of G4, and 1.7% of cases belonged to G5 (Table 1, Figure 3). In this study, 18.4% of cases belonged to <32 weeks, 58.3% of cases were belonged to 32-36 weeks, and 23.3% of cases belonged to >37 weeks (Table 1, Figure 4). In (Table 2), regarding aetiology, among the maternal causes, pre-eclampsia and eclampsia was seen in 18.33% of cases, anaemia was observed in 11.67% of cases, oligohydramnios and prematurity was seen in each 8.33% of cases, Rh negative was seen in 6.67% of cases, diabetes mellitus was seen in 5% of cases, hypothyroidism, fever, and trauma was reported in each 3.33% of cases, and cause was not known in 8.33% of cases. Among foetal causes, IUGR was observed in 6.67% of cases, and Congenital malformation was noticed in 1.67% of cases. Among placental causes, Placenta previa was reported in 8.33% of cases and Abruptio placenta was seen in 6.67% of cases.

Table 1: Distribution of parameters.

Parameters	N	%
Age group (years)		
≤20	6	10.0
21-25	27	45.0
26-30	20	33.3
>30	7	11.7
Booking status		
Booked	6	10.0
Un booked	54	90.0
Parity		
G1	20	33.3
G2	29	48.3
G3	8	13.3
G4	2	3.3
G5	1	1.7
Gestational age (weeks)		
<32	11	18.3
32-36	35	58.3
≥37	14	23.3

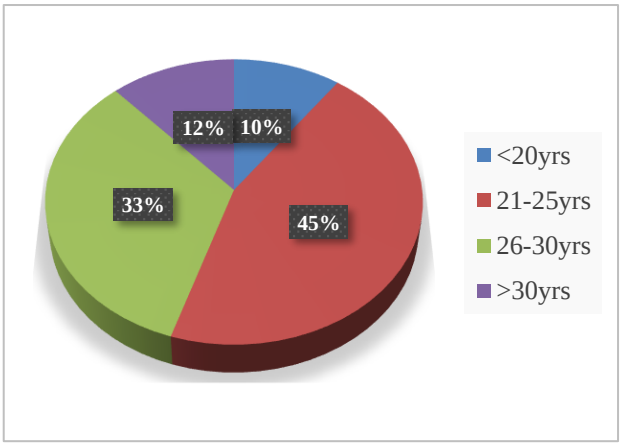

Figure 1: Age distribution.

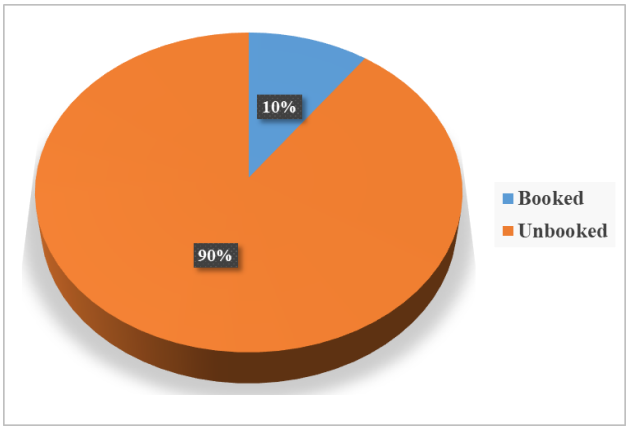

Figure 2: Antenatal booking status of cases.

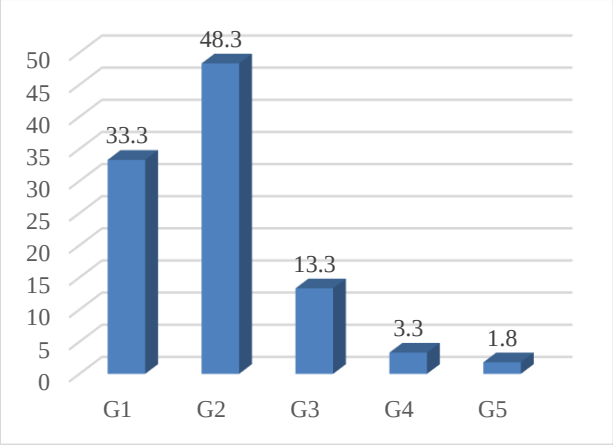

Figure 3: Parity.

Table 2: Aetiology of IUD.

Aetiology	N	%
Maternal causes		
Pre-eclampsia and eclampsia	11	18.33
Anaemia	7	11.67
Oligohydramnios	5	8.33
Prematurity	5	8.33
Rh Negative	4	6.67
Diabetes mellitus	3	5
Hypothyroidism	2	3.33
Fever	2	3.33
Trauma	2	3.33
Unknown	5	8.33
Foetal causes		
IUGR	4	6.67
Congenital malformation	1	1.67
Placental causes		
Placenta previa	5	8.33
Abruptio placenta	4	6.67

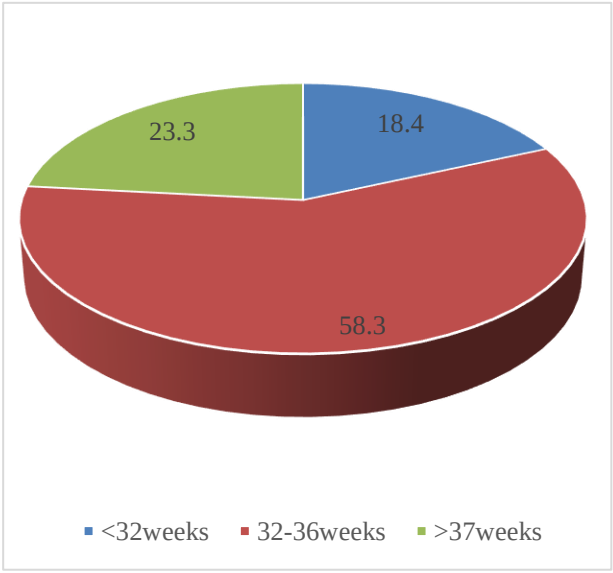

Figure 4: Gestational age distribution of cases.

DISCUSSION

The incidence of IUFD in India was 24.4-41.9.[3] In this study, incidence of IUFD was 38.1. The reason behind this higher incidence was, being a tertiary care hospital, a greater number of cases were referred and most of the high-risk cases also seek treatment at this hospital only.

Age distribution

In this study, 10% of cases were present in <20 years, which was more than Kanavi et al (3.8%), Kalasua et al (4.2%), Kumar et al (5.26%), Meena et al (5.26%), but lesser than Radha et al (15.08%).[3,6-9] In the present study, 45% of cases were seen in 21-25 years, which was similar to Gupta et al (48.2%), Kumar et al (47.4%), but higher than Dedhrotiya (4%), and lesser than Meena et al (59.64%).[7-11] In this study, 33% of cases were seen in 26-30 years, which was similar to Gupta et al (29.4%), Kumar et al (36.8%), but higher than Meena et al (22.8%).[7-11] In this study, 12% of cases were seen in >30 years, which was similar to Meena et al (12.3%), Karale et al (13.9%), Kanavi et al (13.9%), but lesser than Gupta et al (22.4%), Kalasua et al (15.6%), Radha et al (15.93%), and higher than Kumar et al (10.53%).[3,7-12]

Antenatal booking status of cases

In this study, 90% of antenatal cases were un-booked, which was similar to Gupta et al (90.6%), Anjali et al (89.5%), but higher than Meena et al (85.96%), Dedhrotiya et al (72%), Kumar et al (75%), Patel et al (70%).[7,8,11,13,14] Contrastingly, only 5.1% of cases were un-booked in study by Kanavi et al and Karale et al.[3,12]

Parity

In the present study, 33.3% of cases were of G1, 48.3% of cases were of G2, 13.3% of cases were of G3, 3.3% of cases were of G4, and 1.7% of cases belonged to G5. In the present study, 33.3% of cases were of primi para, which was higher than Gupta et al (24.7%), but lesser than Kalasua et al (41%), Karale et al (43%), Kanavi et al. (43%), Meena et al (45.61%), Kumar et al (56.6%).[3,6-8,10-12] In this study, 48.3% of cases were of G2, which was higher than Kumar et al (18.4%), Meena et al (22.8%), 13.3% of cases were of G3 in this study, that was similar to Meena et al (14.91%), but was lesser than Kumar et al (17.1%).[7,8] In this study, 3.3% of cases were of G4, which was lesser than Kumar et al (6.6%), Meena et al (13.15%), and 1.7% of cases belonged to G5 in the present study that was similar to Kumar et al (1.32%), but lesser than Meena et al (3.53%).[7,8]

Gestational age distribution of cases

In this study, 18.4% of cases belonged to <32 weeks, 58.3% of cases were belonged to 32-36 weeks, and 23.3% of cases belonged to >37 weeks. In this study, 23.3% of cases belonged to >37 weeks, which was higher than

Gupta et al (14.1%), Kalasua et al (14.4%), and Kanavi et al (12.7%).[3,6,10] Different gestational age classifications were followed by Kumar et al, Meena et al, Karale et al.[7,8,12]

Aetiology

In this study, anaemia was seen in 11.67% of cases, which was similar to Patel et al (11.2%), but higher than Kumar et al (6.52%), Meena et al (6.14%), and lesser than Anjali et al (16%), and Kanavi et al (20.2%).[3,7,8,13,14] Placenta previa was reported in 8.33% of cases in this study, which was similar to Meena et al (8.96%), but lesser than Kalasua et al (13%), and higher than Kumar et al (5.26%), and Patel et al (1.96%).[3,6-8,13,14] Abruptio placenta was reported in 6.67% of cases in this study, which was similar to Bhatia et al (7.25%), which was lesser than Meena et al (10.52%), Kalasua et al (35.2%), Kumar et al (13.1%), but higher than Patel et al (3.92%).[6-8,15] In the present study, in 18.33% of cases Pre-eclampsia and eclampsia was seen which was similar to Kumar et al (18.2%), Lawn et al (19%), Sharma et al (19.6%), Dedhrotiya (16%), and lesser than Gupta et al (31%), Meena et al (23.68%).[7-11,16] Ante partum haemorrhage was seen in 15% of cases of this study, which was similar to Dedhrotiya (18%), but lesser than Gupta et al (22.8%).[10,11] In this study, IUGR was observed in 6.67% of cases, which was higher than Meena et al (2.63%), but lesser than Gupta et al (11.9%), Dedhrotiya (13%), and Kalasua et al (18%).[6-11] In this study, congenital malformation was observed in 1.67% of cases, which was similar to Meena et al (1.75%), Kumar et al (2.63%), but lesser than Gupta et al (9.4%), Anjali et al (10.5%), Dedhrotiya S (12%), and Kalasua et al (25.6%).[6-13] Prematurity was seen in each 8.33% of cases in the present study, which was higher than Gupta et al (3.5%).[10] Oligohydramnios was seen in 8.33% of cases in the present study, which was similar to Dedhrotiya (8%), but higher than Meena et al (2.63%).[8,11] In this study, diabetes mellitus was seen in 5% of cases, which was similar to Dedhrotiya (4%), Meena et al (4.38%), but higher than Kanavi et al (3.8%), and Karale et al (3.8%).[3,8,11,12] Hypothyroidism was seen in 3.33% of cases, which was lesser than Kanavi JV et al.[3] (10.8%). Fever was observed in 3.33% of cases, which was similar to Dedhrotiya (4%), but higher than Meena et al (0.8%).[8,11] In this study cause for IUFD was unknown in 8.33% of cases, which was higher than Gupta S et al.[10] (5.9%), but lesser than Kumar et al (28.9%), Dedhrotiya (32%), Meena et al (35.08%).[7,8,11] In this study, incidence of IUFD was 38.1/1000 live births (60 deaths per 1576 births), This study finding was similar to Meena et al (38.22), Patel et al (36.17), Singh et al (40), and lesser than Choudhary et al (49), but higher than Karale et al study (27), and Kalasua et al study (27.2).[6,8,12,14-19]

Limitations

Limitations of current study were; sample size was one of the limitations of the study. As it is a retrospective study, potential confounders can not be controlled. It is difficult to identify, Study and Control groups in retrospective studies.

CONCLUSION

In this study, incidence of IUFD was 38.1/1000 live births, and 90% of cases were un-booked. The most common maternal cause of IUFD was pre-eclampsia and eclampsia (18.33%) followed by anaemia (11.67%). The most common foetal cause was IUGR (6.67%), and the most common placental cause was placental previa (8.33%). To prevent IUFDs, all the antenatal cases have to be booked for better care of antenatal period and management of any complications. Health care education should be given to the antenatal mothers and their families.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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