ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 16, Issue, 05, pp.28384-28387, May, 2024
DOI: https://doi.org/10.24941/ijcr.47128.05.2024

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

A RETROSPECTIVE STUDY OF INTRAUTERINE FETAL DEMISE IN BUNDELKHAND REGION

Hema J. Shobhane[1] and Garima Singh[2]

[1]Professor and Head, Department of Obstetrics & Gynecology, MLB Medical College, Jhansi, UP, India
[2]Junior Resident, Department of Obstetrics & Gynecology, MLB Medical College, Jhansi, UP, India

ARTICLE INFO

Article History:
Received 20th February, 2024
Received in revised form
25th March, 2024
Accepted 14th April, 2024
Published online 30th May, 2024

Key words:

IUFD, Maternal Condition, Pre-Eclampsia.

Corresponding author:** ***Lili Zhu

ABSTRACT

The ecotoxicological **Background:** Intra uterine foetal death is an emotional distress for mother, her family and for the obstetrician also. Timely intervention reduces this. The study determine the possible causes of stillbirths or IUFD. **Material and methods:** This was a Prospective observational study was conducted from September 2022 to August 2023. The study included all pregnant women who were delivered at the hospital with Intrauterine Fetal Demise or Still Birth at or after 24 weeks of pregnancy. **Results:** Intra uterine fetal death was found 42.98 per 1000. The most common maternal cause of IUFD was Pregnancy induced hypertension (30.0%) followed by Antepartum hemorrhage (22.43%) and congenital malformation (5.75%). Out of 140 IUD, 22 still births were due to involvement of multiple factors. **Conclusion:** Intrauterine foetal mortality may be prevented by modifying maternal risk factors such as hypertension, severe anaemia, and diabetes management. IUFD can be prevented by early registration of pregnancy, good nutrition, regular ANC visits and early referral to tertiary centre.

Citation: ***Hema J. Shobhane and Garima Singh.*** **2024.** "A Retrospective Study of Intrauterine Fetal Demise in Bundelkhand Region*". International Journal of Current Research*, 16, (05), 28384-28387.

INTRODUCTION

Intrauterine death (IUD) definition includes antepartum deaths beyond 20 weeks of gestation or birth weight ≥500g when gestation age not known (WHO)(1). If FD occurs <twenty four weeks of pregnancy, it is called early IUFD; if occurs >24 weeks, it is called late IUFD. FD occurs in about 1% of all pregnancies (2). At any gestational age, an IUFD is a significant obstetrical disaster. Delivery of fetus showing no signs of life as indicated by the absence of breathing, heart beats, pulsation of the umbilical cord or definite movements of voluntary muscles. According to the International Classification of Diseases, revision 10 (ICD -10) (3), a fetal death weighing at least five hundred gms (or, if birth weight is unavailable, after twenty two weeks gestation or a crown-heel length of less than 25 cms or gestational age of 24 weeks or a crown-heel length of thirty five cms). In many countries particularly in the developing world, intrauterine foetal death (IUFD) is calculated on the basis of deaths at 28 or more weeks of gestation or weight of 1000 gms or more (3). The rate of IUFD is 6.4 per 1000 live births in a developing country like India, while the rate of perinatal mortality is 32 per 1000 live births (4). The causes of fetal death include: fetal causes (25-40%), placental causes (25-35%), maternal causes (5-10%) and in 25-35% of cases the cause remains unknown.

The maternal risk factors associated with intrauterine fetal death can be enlisted as antiphospholipid antibody syndrome, isoimmunisation, hypertensive disorders, cholestasis, vascular diseases, infections, cyanotic heart disease, severe anaemia. The fetal factors include congenital anomaly, postmaturity, coagulation disorders, fetal growth restriction and chromosomal abnormalities. Placental causes of intrauterine fetal demise include abruption, cord abnormalities, true knots in cord. Apart from serious maternal complications like placental abruption haemorrhage, disseminated intravascular coagulation, shock, septicaemia, there may be tremendous impact on the psychological status of the mother commonly depression and postpartum psychosis. By proper antenatal check-ups, the high-risk cases associated with poor outcomes can be identified. To estimate the likelihood of recurrence, prevention, or corrective action, it is critical to identify specific likely causes of foetal mortality. Stillbirth has been understudied and underreported for a variety of reasons, and efforts have been made to reduce the prevalence of unfavorable pregnancy outcomes in developing nations (5). Stillbirths account for about 60% of perinatal mortality in our country, and they can be avoided to a greater extent (6). Stillbirths are difficult to prevent unlike early neonatal death, because all the risk factors have not been adequately identified.

Despite improvement in antenatal care and intrapartum care, stillbirths remain an important, largely unstudied, and major problem in obstetrics worldwide, especially in developing country like India. Although the overall perinatal mortality rate has fallen in the past several decades, the incidence of stillbirth in developing countries varies from 1.5 to 2.2 %. In India still births rate is as high as 100/1000 births in some regions.(8) Now India is a leading contributor of stillbirth and recent lancet study suggests that nearly one fourth of all stillbirths are from India.(9). This retrospective study was conducted to determine the possible causes of stillbirths or IUFD.

MATERIAL AND METHODS

This was a Prospective observational study was carried at Department of Obstetrics & Gynecology, MLB Medical College, Jhansi from September 2022 to August 2023. The study included all pregnant women who were delivered at the hospital with Intrauterine Fetal Demise or Still Birth at or after 24 weeks of pregnancy. The study was conducted after approval of ethical committee. After obtaining informed consent, the patient or relatives, if the patient was not in good health, were asked to provide a complete medical history. All patients were informed about the procedure's approach, risks, advantages, outcomes, and associated complications. Maternal age, parity, probable cause for IUFD, booked/unbooked case, mode of delivery, maternal complications and placental histopathology were among the parameters used in the study.

Statistical analysis: Data was analysed using SPSS software version 25 and the tests used were Chi-square test and Fischer test. Incidence was calculated for 1000 live births.

RESULTS

A total of 3257 deliveries were conducted in the department during the year, out of them 140 were intra uterine fetal death at the rate of 42.98 per 1000 (Figure-1). The mean age of women was 26.4±4.4 years with majority in the age group of 20-25 years. Majority of the cases were belonged to rural areas (53.57%). The multiparity cases were 65.72% and unbooked cases were 78.57%. 90.0% of cases were delivered by normal vaginal delivery. In this study 52.27% cases were term and male and female cases were in equal no. i.e. 50.0%. In this study we also find 67.86% of cases whose birth weight is >1.5kg (Table 1). The factors contributing for the intra-uterine death were Pregnancy induced hypertension (30.0%), Antepartum hemorrhage (22.43%), congenital malformation (5.75%), Prematurity (2.86%) and Unknown (4.29%). In this study 28 cases of IUD were due to comorbid conditions in which 8 cases of diabetes mellitus, 9 cases of anemia, 5 cases of thyroid disorders and 2 cases from heart disease. Table also showing that 22 still births due to involvement of multiple factors in which HTN+FGR+APH in 11 cases, HTN+FGR in 5 cases and PIH +FGR in 6 cases.

DISCUSSION

In India, the rate of still birth rate in India is reported to be 20-66 per 1000 total birth in different states (10). During the study period there were 140 IUFD out of 3257 total birth hence proportion of IUFD in our study was 42.98 per 1000 total birth. Bhatia T *et al*. (11) reported the still birth rate to be 27.76/1000 birth and Korde-Nayak *et al*. (12) showed stillbirth rate of 23.4/1000 birth. Vidyadhar B *et al*. (13) showing stillbirth rate of 33/1000 births which were lower than our study. India's Newborn Action Plan has articulated MOHFW vision and goal of "Ending preventable stillbirths to achieve "Single Digit SBR" by 2030, with all the states to individually achieve this target by 2030 with 4.4% average annual reduction rate (ARR) of Still Birth Rate. Preventing stillbirths along with neonatal deaths are integral strategy within the India Newborn Action Plan (INAP) with their specific targets and interventions. (Child Health Division Ministry of Health and Family Welfare Government of India, 2016).

The higher rates in the current study as compared to western countries could be explained by the fact that ours tertiary care institute catering to rural population. Poor socioeconomic status, poor nutrition leads to anemia and malnutrition which is a major contributor for perinatal mortality. Illiteracy, lack of awareness of adequate antenatal care also contributes to higher stillbirth rate. IUFD rates were higher in high birth order which highlights the importance of family planning. In this study 78.57% cases were unbooked or who have not visit for antenatal care. Lack of adequate antenatal care (ANC) is the most important problem that needs urgent attention. If patient is given adequate ANC then complication like anemia, PIH etc. can be diagnosed at an earlier stage and can be managed. So, IUFD due to these causes can be prevented(14). Antenatal care is associated with better pregnancy outcome. Al Kadri *et al*. found that women who did not receive ANC are at 70% risk of IUFD, which is clearly indicated from our study that only 15 out of 170(8.82%) patients with IUFD had more than three antenatal visits (15).

In Gupta DS *et al* study, majority of the cases were unbooked (90.6%) and only 9.4% were booked cases(16). similar results were obtained by Sharma *et al*. (17), majority were unbooked cases was 90.6% and booked cases were 9.4%. Whereas Kumar *et al*. (18), stated that ninety eight point four percent of women were booked. Katti *et al*. (19) also found that IUFD rates were higher in unbooked cases (67.15%) as compared to booked cases (32.85%). Improper antenatal care leads to lack of identification of high risk factors, anemia, preclampsia, placenta previa, malpresentations, Rh negative status, fetal anomalies and delay in effective management of these cases. The parity of the patient influences the pregnancy outcome. In present study proportion of IUFD was higher in multigravida 92 (65.72%). Korde-NV *et al*, observed 51.6% of multigravida who had stillbirths (20). In our study, Pregnancy induced hypertension contributed to 30.0% cases of intra-uterine death. This was higher to the study by Kumar *et al*. (18), hypertensive disorders of pregnancy which contributes to 16.39% death. The hypertensive disorders of pregnancy contributing to the IUD was 14.1% in the study by Safarzadeha *et al*., Chippa S *et al*. (24.39%) and Yogesh *et al*. (17%) (21-23). Vidyadhar *et al*. (13) observed that 7% of total stillbirths were congenitally malformed. Sikha Rani *et al*. (24) observed that long referral interval between health centres and tertiary health institutions, delay in seeking care, inadequate intrapartum monitoring were major causal factors for intranatal stillbirths in that locality.

Most frequent types of stillbirth according to gestational age (7)

24-27 weeks	28-37 weeks	37+ weeks
Infection (19%)	Unexplained (26%)	Unexplained (40%)
Abruption placenta (14%)	Fetal malformation (19%)	Fetal malformation (14%)
Anomalies (14%)	Abruption placenta (18%)	Abruption placenta (12%)

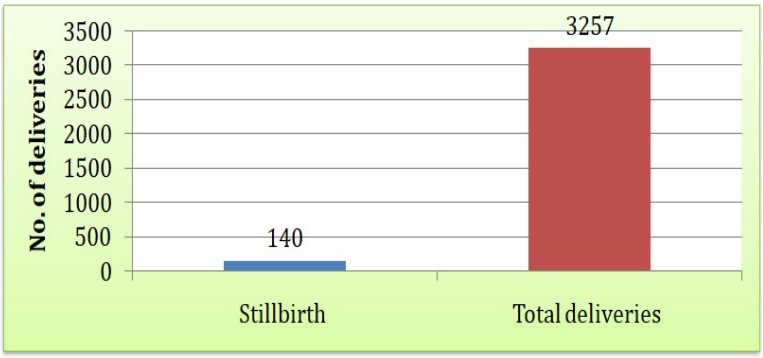

Figure 1. Stillbirth cases from total deliveries

Table No. 1. Demographic profile of cases

Parameters		No. of IUD	Percentage
Age (mean±SD) yrs		26.4±4.4	
Area of residence	Rural	75	53.57
	Urban	65	46.43
Parity	Primi	48	34.28
	Multi	92	65.72
Mode of delivery	Cesarean	10	14.0
	Vaginal	126	90.00
ANC visit	Yes	30	21.43
	No	110	78.57
Birth time	Preterm	64	45.73
	Term	76	54.27
Sex	Male	70	50.0
	Female	70	50.0
Birth weight	<1.5 kg	45	32.14
	>1.5 Kg	95	67.86

Table 2. Causes of intrauterine fetal death

Cause	No. of IUD	Percentage
Pregnancy induced hypertension	42	30.0
Antepartum hemorrhage	30	21.43
Co-morbidities		
Diabetes mellitus	8	5.75
Obesity	5	3.57
Thyroid disorder	4	2.86
Heart disease	2	1.43
Anemia	9	6.43
Multiple factors		
HTN + FGR+APH	11	7.86
HTN +FGR	5	3.57
PIH + FGR	6	4.29
Congenital malformation	8	5.75
Prematurity	4	2.86
Unknown	6	4.29

In present study 5.75% cases of congenital malformation lead to IUFD. Anjali C *et al*. (25) had reported IUFD due to congenital malformation in 10.5% and 10% respectively. Prevention of intranatal foetal death as well as stillbirths and unexpected early neonatal deaths should be a multi-disciplinary approach and should include obstetricians, paediatric pathologists, paediatricians, radiologists, geneticist and other paramedical support stuffs. Preconception care, early detection of risk factors like maternal diseases, congenital malformations. Finally, awareness in the community level improves the ultimate outcome to a large extent.

CONCLUSION

Different etiological factors responsible for IUFD are poor health seeking behaviour, poverty, illiteracy, poor nutrition etc. Despite availability of modern intervention like non stress test, ultrasonography majority of causes of IUFD remains unknown.

Intrauterine foetal mortality may be prevented by modifying maternal risk factors such as hypertension, severe anaemia, and diabetes management. Ultrasound examination throughout the first and second trimesters may help rule out congenital abnormalities and placental problems, both of which are linked to intrauterine foetal mortality. IUFD can be prevented by early registration of pregnancy, good nutrition, regular ANC visits and early referral to tertiary centre.

Conflict of interest: Nil

REFERENCES

1. Stanton C, Lawn JE, Rahman H, *et al*. Stillbirth rates: delivering estimates in 190 countries. Lancet 2006;367(9521):1487-1494.
2. Robinson GE. Pregnancy loss. Best Pract Res Clin Obstet Gynaecol. 2014;28(1):169-78.
3. World Health Organization. ICD-10: international statistical classification of diseases and related health problems: tenth revision, 2nd ed. World Health Organization, 2004. https://apps.who.int/iris/handle/10665/42980.
4. Estimates of mortality indicators-Census of India website-vital statistics Chapter 4 statement 51. 2010, 81Pg.
5. Why India has stillbirth, worlds most? WHO 2015: Global incidence of Stillbirth stillborn babies - India Spend Journalism, 2015.
6. WHO.int/ International statistical classification of diseases and related health problem: tenth revision, volume-2: instruction manual. Geneva: World Health Organization, 1993.
7. Fretts RC, Usher RH. Causes of fetal death in women of advanced maternal age. Obstetrics & Gynecology. 1997 Jan 1;89(1):40-5.
8. McClure EM, Phiri MN, Golderburg RL. Stillbirths in developing countries. Int J Gynecol Obstet. 2006; 94(2):82-90.
9. Lawn JE, Blencowe H, Pattinson R, Cousens S, Kumar R, Ibiebele I *et al*., 2011. The Lancet's Stillbirths Series steering committee. Stillbirths: Where? When? Why? How to make the data count? Lancet. 377(9775): 1448-63.
10. Bhati D. Stillbirths: A high magnitude public health issue in India. SEAJPH, 3(1):3.
11. Bhatia T, Narshetty JG, Bagade P, Kulkarni A, Rai M. Clinical study of cases of intrauterine foetal death in a tertiary centre. *Int J Res Med Sci*., 2016;4(3):800-5.
12. Korde-Nayak, Vaishali N, Gaikwad PR. Causes of stillbirths. J Obstet Gynaecol. 2008;54(4):314-8.
13. Vidhyadhar B, Chandaliya RM, Pandit HA. Review of intrapartum causes of stillbirths at tertiary care hospital. *IORSR J of Pharm*. 2010;2:45-9.
14. Richardus, Jan H, Graafmans, Wilco C. The perinatal mortality rate as an indicator of quantity of care in international comparison. Med Care. 1998;36(1):54- 66.
15. Al Kadari, Hanan T, Hani. Factors contributing to intra uterine fetal death. *Arch Obstet Gynaecol*. 2012;286(5):1109.
16. Gupta DS, Rani DK, Najam DR. Intrauterine fetal demise: A retrospective study in tertiary care center. Int J Clin Obstet Gynaecol. 2022;6(2):18-21.
17. Sharma S, Sidhu H, Kaur S. 2016. Analytical study of intrauterine fetal death cases and associated maternal conditions. *Int J Appl Basic Med Res.,* 6(1):11-3.
18. Kumar AK, Kanakeri R, Anjanappa B. Clinical study of various risk factors associated with intrauterine fetal death. Int J Reprod Contracept Obstet Gynecol. 2017;6:5293-8.
19. Katti K, Rani VA, Umashankar KM, Dharmavijaya MN. Clinical study of intra uterine fetal death. Indian Journal of Obstetrics and Gynecology Research. 2017;4(4):404-6.
20. Korde NV, Gaikwad P. Causes of stillbirth. J Obstet Gynaecol India. 2008;58.
21. Safarzadeh A, Ghaedniajahromi M, Ghaedniajahromi M, Rigi F, Massori N. 2014. Intra uterine fetal death and some related factors: A silent tragedy in South-eastern Iran. J Pain Relief., 3:1.
22. Chippa S, Reddy VSPK, Bhavani N, Mukhopadhyay B, Giri A, Sathineedi A. 2014. Study of intrauterine fetal death. *Int J Recent Trends Sci Technol.,* 12(3):624-6.
23. Rathava YR, Mehta LR, Purohit P, Narola DR, Munshi SP, Patel RV. 2013. Intra uterine fetal death: an observational study. *Int J Scient Res.,* 2(11):388-90.
24. Rani S, Chawla D, Huria A, Jain S. 2012. Risk factors for perinatal mortality due to asphyxia among emergency obstetric referrals in a tertiary hospital. Indian Pediatrics. 2012;49:191-4.
25. Anjali C, Vineeta G. 2014. Epidemiology of Intrauterine fetal deaths: a study in tertiary referral center in Uttarakhand. *IOSR J Dent Med Sci.,* 13(3):03-6.

****