



## ANALYTICAL STUDY OF INTRAUTERINE FETAL DEATH CASES AND ASSOCIATED MATERNAL CONDITIONS

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### ABSTRACT

**Introduction:** Intrauterine fetal death is an important indicator of maternal and perinatal health of a given population. This study was undertaken to study the maternal and fetal factors associated with intrauterine fetal death. **Materials and Methods:** This was a retrospective single center study. The details of complaints at admission, obstetrics history, menstrual history, examination findings, per vaginal examination findings, mode of delivery and fetal outcomes, placental examination, condition of cord and investigation reports were recorded. **Results:** A total of 134 intrauterine fetal deaths were reported amongst 3455 deliveries conducted during the study period. The incidence rate of intrauterine fetal death was 36/1000 live births. 110 deliveries were unbooked and unsupervised. Out of 134 cases we found gestational hypertension 28.3%, anemia 53.7%, antepartum hemorrhage 28.3%, and congenital malformations (CMFs) 9.7% and associated maternal condition in 11.94% most of cases were reported from Rural population (74.6%) and from low socio-economic group (77.6%). **Conclusions:** The incidence of intrauterine fetal deaths in our population is higher than that reported from developed countries. This is associated with anemia, pregnancy induced hypertension, illiteracy, low socioeconomic status, and higher incidence of undiagnosed CMFs.

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### INTRODUCTION

Fetal death is an obstetric death accounting for approximately half of perinatal death. IUD is an event which has always challenged the obstetricians. The mode of antenatal care has changed in past 50 years. The mode of antepartum and intrapartum surveillance for fetal wellbeing has advanced in last few decades. There are so many maternal conditions and diseases that are responsible for poor obstetrical outcomes. IUD is a useful index to measure the values of antenatal and intranatal care. By proper antenatal check-ups, the high-risk cases associated with poor outcomes can be identified. The aim of this study was to analyze the maternal conditions associated with fetal death with specific reference to clinical presentations, fetal, and maternal complications and to find the preventable causes of fetal death.

### MATERIALS AND METHODS

This was a single-center retrospective study of intrauterine fetal death and associated maternal conditions. The details of complaints at admission, obstetrics history, menstrual history, examination findings, per vaginal examination findings, mode of delivery and fetal outcomes, placental examination, condition of cord and investigation reports were recorded. The records of babies born below 28 weeks of gestation, fetus weighing below 1000 g and twin babies were excluded. The

complaints included a period of amenorrhea, duration of labor pains, history of leaking, bleeding per vaginum (PV), pregnancy induced hypertension (PIH) or eclampsia, decreased or loss of fetal movements. The obstetrical history included parity, abortions, IUD, neonatal death, lower segment cesarean section (LSCS), preterm delivery, antipartum hemorrhage (APH) or PIH in a previous pregnancy. The records of per vaginal findings included bleeding PV, dilatation of the cervix, effacement of the cervix, presenting part, membrane, pelvis, hand prolapse, or cord prolapse. The details of the mode of delivery included vaginal delivery, LSCS, forceps, and laparotomy. Fetal outcomes recorded included fresh/macerated IUD, sex of the baby, weight, congenital malformations (CMFs), and birth injuries. Findings of placenta like infarction, calcification, and retroperitoneal clot and of conditions of the cord like knots, cord around neck, and any other abnormality were also recorded.

### RESULTS

The present study consisted of 134 cases of intrauterine fetal death or IUDs which occurred during the study period. A total of 3455 deliveries were conducted during this study period. The IUD rate was 38 per 1000 births. Of 134, 80 (59.7%) were premature and 54 (40.2%) were mature. 110 (82.02%) were fresh IUDs and 24 (17.9%) were macerated. 110 mothers (82.02%) were immunized with tetanus toxoid and 24 (17.9%)

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were unimmunized. Only 24 were booked and supervised deliveries whereas 110 (82.0%) were unbooked. 74.6% patients were from rural areas and 42% were from urban areas. About 77.6% were from low-income group, 8.9% were from middle-income group and 13.4% from high-income group.

There was a history of previous IUD in 11(10%). Among the medical disorders, hypertension and anemia were associated with higher incidence of IUD. 38 (28.3%) were hypertensive of which 6 (15.7%) had severe gestational hypertension and 6(15.7%) had eclampsia. 72 (53.7%) had anemia out of which 42 (31.3%) had mild anemia, 10 (7.4%) had moderate anemia and 20 (14.9%) had severe anemia. 113 (84.3%) were delivered by normal, 18 (13.4%) were delivered by LSCS and in 3 cases exploratory laparotomy was performed for rupture uterus. 38 (28.3%) had APH out of which 27 (20.1%) had abruptio placentae, and 11 (3.2%) had placenta previa. The other maternal medical diseases related with IUD were diabetes, heart disease, hyperpyrexia, and infective hepatitis. Table 1 shows age group of mothers and Table 2 shows parity and Table 3 shows weight of fetuses. Table 4 shows causes of IUD and Table 5 shows CMFs in IUD.

**Table 1** Age distribution in IUD cases

Age Group	Number
15 - 24	30
24 - 34	99
34 - 45	5

**Table 2** Parity distribution in IUD cases

Gravida	Number
Primi Gravida	59 (44%)
Second Gravida	35 (55.9%)
Third Gravida	18 (13.4%)
Multi Parity	22 (16.4%)

**Table 3** The birth weight of the fetus

Birth weight (grams)	Number of IUD (percentage)
1000-1500	41 (30.59%)
1501-2000	42 (31.34%)
2001-2500	20 (14.9%)
2501-3000	20 (14.9%)
3001-3500	5 (3.73%)
3501-4000	8 (5.97%)

**Table 4** Causes of intrauterine fetal death

Cause	Number (percentage)
Pregnancy induced hypertension	38 (28.3%)
Antepartum hemorrhage	38 (28.3%)
Maternal medical condition	16 (11.94%)
Congenital malformation	13 (9.7%)
Unknown etiology	19 (14%)

**Table 5** Congenital malformations and IUD

Type of malformation	Number
Hydrocephalus	2
Anencephaly	3
Renal anomalies	2
Fetal hydrops	6
Total	13

## DISCUSSION

This study consists of 134 IUDs amongst 3455 total births thus the incidence of IUDs was 36/1000 births. The incidence of IUD reported from western countries ranges from 4.7% to 12.0%.[1] This is lower than that observed in our study. However, the incidence rate reported from various centers in India is higher 24.4–41.9%.[2-7] One reason of higher IUD at our center could be due to the selection bias due to it being a

tertiary care referral center and all major obstetric complication identified 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. The incidence of IUD is higher than that reported from South India,[6,7] and this could be due to the higher literacy rates, increased awareness, and better antenatal care in south India. Nutritional deficiency and anemia are leading cause of poor pregnancy outcomes, the majority of our patients had anemia. The increased risk of fetal death is present amongst the teenage group and older women. The western studies show that increased risk is present in women over 35 years of age. In our study, however, the fetal deaths were more in the age group of 24-34 years. This is because most of the women in India complete the family before 35 years of age. Increased risk of IUD is seen amongst primigravida as and after fifth pregnancy.[3] The incidence is a higher risk amongst poor socioeconomic status.[8] Most of our patients also belonged to poor socioeconomic status.

The incidence is higher amongst women with minimal or no antenatal care.[9] This is also reflected in our study where the rates were highest amongst the unsupervised deliveries. The incidence of APH in our study was 28.3%, which was similar to that reported in other studies.[2] The incidence of gestational hypertension in this study was 28.3% which is similar to that reported in other studies.[2] The incidence of CMF was 8.2% which was also similar to that reported from other studies.[2]

## CONCLUSION

This study shows that the incidence of IUDs in our population is similar to most of the other Indian studies, but higher than those reported from developed countries. This is associated with anemia, rural area, poor socioeconomic status, multiparity, previous history of pregnancy loss, unsupervised deliveries, gestational hypertension, and CMFs. Proper screening and antenatal supervision can play an important role in decreasing the rate of IUDs.

## References

1. Fretts RC, Boyd ME, Usher RH, Usher HA. The changing pattern of fetal death, 1961-1988. *Obstet Gynecol* 1992; 79:35-9.
2. Misra PK, Thakur S, Kumar A, Tandon S. Perinatal mortality in rural India with special reference to high risk pregnancies. *J Trop Pediatr* 1993; 39:41-4.
3. Dasgupta S, Saha I, Mandal AK. A study on profile of IUDs. *J Indian Med Assoc* 1997; 95:175, 178.
4. Kumari R, Mengi V, Kumar D. Maternal risk factors and pregnancy wastage in a rural population of Jammu District. *JK Sci* 2013; 15:82-5.
5. Shah U, Pratinidhi AK, Bhatlawande PV. Perinatal mortality in rural India: A strategy for reduction through primary care. I IUDs. *J Epidemiol Community Health* 1984; 38:134-7.
6. Jadhav MA, Christopher LG. Perinatal mortality in Vellore. Part I: A study of 21,585 infants. *Indian J Pediatr* 1986; 53:347-52.

7. Bai NS, Mathews E, Nair PM, Sabarinathan K, Harikumar C. Perinatal mortality rate in a south Indian population. *J Indian Med Assoc* 1991; 89:97-8.
8. Daga AS, Daga SR. Epidemiology of perinatal loss in rural Maharashtra. *J Trop Pediatr* 1993; 39:83-5.
9. Moyo SR, Tswana SA, Nyström L, Mahomed K, Bergström S, Ljungh A. An incident case-referent study of IUDs at Harare Maternity Hospital: Socio-economic and obstetric risk factors. *Gynecol Obstet Invest* 1994; 37:34-9.

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