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EVALUATION OF ETIOLOGICAL FACTORS IN INTRA UTERINE FETAL DEATH

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ABSTRACT: AIMS AND OBJECTIVES OF THE STUDY: Analysis of intrauterine fetal deaths with respect to various parameters like age, parity, period of gestation, antenatal check up and birth weight of baby and the preventive measures that could be taken to avoid it. **MATERIAL AND METHODS:** This clinical study was conducted at Vanivilas hospital and Bowring & Lady Curzon. A total of 200 cases of fetal death after 20 weeks of pregnancy were included in the study, on the basis of simple random sampling method. Details of obstetric history were taken. Obstetric complications were looked and noted. Necessary lab investigations are done.

Fetal autopsy was performed in 18 cases with parent consent. The patients were followed up in the post natal period till discharge and any morbidity noted **RESULTS:** 200 cases of IUD in 1 year and 6 months period have been studied in detail, analyzed and discussed. Total no of births during this period were 18,844. IUD rate during this period was 32.44 per 10000 births. Maximum numbers of cases were found in age group of 21-30 years (135), 67.5%. There were 105 cases of primigravida (52.5%) encountered in the study. 52cases were second gravida. Highest gravidity was 5. Most cases were unbooked (86%) and were from rural areas. 83.5% of cases were from low socioeconomic status. Maximum cases (153, 76.5%) were preterm babies. **CONCLUSION:** The result of the present study shows that there is a high risk of IUD in unbooked cases, low socioeconomic status, in extremes of age and parity and low birth weight babies.
KEY WORD: Primigravida, Histopathology
ABBREVIATIONS USED: IUD, HIV Ag, TORCH.

INTRODUCTION: Birth of a live baby is God's gift. The birth of a dead baby is a bitter calamity. The occurrence of fetal death is one of the tragedies that confront the attending obstetrician, challenging his/her medical and personal skills.

Families who experience loss of an infant in the perinatal period struggle with the cause of their baby's death. Questions such as "*Why did this happen to our baby*?" and "*Will this happen again*?" are common, and families in such a situation often present these questions to their obstetrician. To address these issues, a careful and complete medical evaluation of the infant that looks into the etiology and pathogenesis of fetal death is necessary. The principle goal of such an evaluation is to establish an identifiable diagnosis that will aid in counselling of the family regarding the cause of baby's death, the recurrence risk, and the plan of management in future pregnancies.

Parents now expect and demand and deserve accurate information on which to base future child bearing decisions. For a clinician caring for the mother, these expectations can only be met, when a cause or diagnosis is established. Newer techniques of diagnosis and a better understanding

of pathophysiology have led to the determination of the cause of death in a greater proportion of fetal deaths than in the past.

Unexplained IUDs are now a major contributor to perinatal mortality. Whereas intrapartum stillbirths are thought to be the most preventable component of perinatal mortality. The dramatic decline in the IUD rate in developed countries has been attributed to an improvement in obstetric surveillance.

AIM OF THE STUDY: Analysis of intrauterine fetal deaths with respect to various parameters like age, parity, period of gestation, antenatal check up, sex and birth weight of baby and the preventive measures that could be taken to avoid it.

INCLUSION CRITERIA: All pregnant women with documented intra uterine fetal death getting admitted, high risk cases (anaemia, GDM, PIH, placenta previa, Abruptio placenta, cardiac disease other systemic disorders, infection, etc) which end up in IUFD during course of their stay.

EXCLUSION CRITERIA: intra partum still births, multiple pregnancy with even single live fetus

RESULTS: The clinical study was conducted at Vanivilas Hospital and Bowring & Lady Curzon Hospital during period 2009-2011.

TABLE 1: Age Distribution:

Age group in years	Number of cases	Percentage
Below 20	44	**22**
21-25	50	**25**
26-30	85	**42.5**
31-35	21	**10.5**
Total	**200**	**100**

Out of 200 cases of intrauterine fetal deaths 44 Patients were below the age 20 years and 21 cases were above 31 years

TABLE 2: Distribution in relation to parity

Parity	Number of cases	Percentage
0	105	52.5
1	52	26
2	24	12
3	10	5
4	9	4.5
Total	**200**	**100**

From the above table it can be seen that maximum number of fetal deaths were seen in primi gravida being 105 cases constituting 52.5%

TABLE 3: Booked and Emergency cases

Type of pregnancy	No of cases	IUD Percentage
Unbooked	172	86%
Booked	28	14%

(p<0.05)

In the present study 172 were emergency admission (unbooked) and 28 were booked cases. The incidence of IUD were high in unbooked cases compared to booked cases.

From the above table   IUD RATE is 6 times as compared to singleton pregnancy. When chi-square test is applied (p<0.05). It is statistically significant.

TABLE -4 Socio- economic status

	Middle Class	Low Class
Number of cases	33	167
Percentage	16.5%	83.5%

TABLE 4.1: Area of residence

	Rural	Urban
Number of cases	121	79
Percentage	60.5	39.5

In this study 167 Belong to low socio-economic status and 121 cases were from rural area.

TABLE 5: Gestational age

Gestational age	Number of cases	Percentage
Preterm<37	153	76.5
Term37-42 weeks	46	23
Post term >42 weeks	1	0.05
Total	**200**	**100**

It can be seen from the above table that IUD were high in preterm group only 1 from post term.

DISCUSSION: 200 cases of intrauterine fetal deaths were studied from December 2009 to September 2011 at Vanivilas Hospital and Bowring & Lady Curzon hospital attached to Bangalore Medical College & Research Institute, Bangalore.

INTRA UTERINE DEATH RATE: In our study incidence of intra uterine death rate is 32.4/1000 live birth.

Present study is comparable with those of Kameshwaran et al., (1993)[10] 35.1/1000 live births. This is very high when compared to IUD rate in developed countries. Complicated and high risk cases were referred to our institution from far of places of the district and from the neighboring districts. Many of them were admitted late in labour.

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Shanthi et al (1983)[16] study shows that incidence of IUD was 43.3%, and Hovatta et al (1983)[8] stated that incidence was 6.2% and Chitrakumari et al (2001)[6] reported that incidence was 64.1%.

AGE DISTRIBUTION: Study done by Incerpi M.H. et al., (1998)[9] in university of Southern California (1990-1994) mean maternal age was 27 years, 15% were < 20 years old whereas 16% were >35 years.

Age of the mother more than 35 years increases the chances of fetal death by increased rate of fetal chromosomal abnormalities and maternal medical disorders like hypertension.

Mishra et al., (1983)[13] reported a high perinatal mortality when the maternal age was between 20 -30 yrs.

Arun H Nayak[1] & Asha R. Dalai (1992) reported that high perinatal mortality was in the age group of 21-30 years (71%) and 25% in < 20 years.

In our study perinatal mortality is 67.5% in the age group 21-30 and 10.5% in the age group > 31 years and 22% in the age group < 20 years.

COMPARISON OF IUD DEPENDING ON PARITY DISTRIBUTION: In our study and study done by B. Mishra et al[12] IUD rate was highest in primi gravida followed by second gravida.

In a study done by Chamberlain et al., (1979)[4, 5] there was a higher risk in first pregnancy. According to Baird and Walker (1954)[3], maternal age and parity tend to rise together. The high fetal mortality seen among the multipara is due to the additive effect of high maternal age associated with a higher parity. Asha R. Dalai (1992)[1] study shows that IUD was high in primi and fourth gravida.

COMPARISON OF IUD WITH AND WITHOUT ANTENATAL CARE: Optimal antenatal care reduced the incidence of fetal death to a great extent. There is a significant correlation between the number of antenatal visits and fetal death. The incidence of fetal death is high in unbooked cases compared to the booked cases. Mishra et al., (1973)[13] reported a six times higher mortality among unbooked cases when compared to booked cases. Kameshwaran et al., (1993)[10] and Gupta et al., (1984)[7] observed five times higher stillbirth rate in unbooked cases. In a study done by Chitra Kumari et al., (2001)[6] at M.G.M. Medical College and Hospital, Navi, Mumbai (1997 to 1998) 81.5% of cases were unbooked. Aruna Rangekar and Bandana Biswas (1990)[2] study shows 93% IUD in unbooked cases. In our study IUD in unbooked cases is 86%.

COMPARISON OF IUD ON THE BASES OF SOCIO ECONOMIC STATUS: Chitrakumari et al (2001)[6] reported 84% of cases belonging to socio economic class IV and only 21% of cases were literate. Aurna Rangekar et al., (1990)[1] reported that 76% of the cases were from lower socio economic status. In our study it is 83% were from lower socio economic status and 1.3% in upper socio economic status

COMPARISON OF IUD ON THE BASES OF GESTATIONAL AGE: Gestational age is the most important determinant of IUD rate along with birth weight. The lesser the gestational of the baby, the greater is the fetal loss. Baird et al., (1954)[3] recorded antenatal mortality of 205 / 1000 birth in the less than 37 weeks gestational group and the least rate of 11.7 /1000 births was in the 40 - 41 weeks gestational age group. In our study it is 76.5% in<37weeks of gestation and 0.05% in post

term pregnancy. Chitrakumari et al, (2001)[6] reported that 57.8% IUD was seen in preterm pregnancy and 42.1% IUD seen in(37-42) weeks of gestation .

CONCLUSION: Fetal mortality remains high in developing countries and the principal goal of an obstetrician is to prevent the pregnancy wastage. Investigation of the possible causes of IUD is important in helping the family cope with a devastating situation. When a cause or association is finally identified, this information can then be used to counsel and guide future pregnancies.

The result of the present study shows that there is a high risk of IUD in unbooked cases. Low socioeconomic cases, in extremes of age and parity and low birth weight babies.

The observation regarding the etiology of IUD also indicates that potentially preventable causes constitute a major proportion of the fetal deaths. An attempt at early identification and appropriate management of these preventable factors help in reduction of fetal deaths.

So it can be concluded that adequate antenatal care, recognition of high risk cases, education, early diagnosis and treatment of clinical complications can prevent majority of stillbirths.

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FIGURE – 1: Photograph showing intra uterine fetal death of a preterm baby.

FIGURE – 2: Photograph showing intra uterine fetal death with macerated.

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