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Original Research Article

Analysis of the Maternal Etio Pathological Factors in Intra Uterine Foetal Demise after 20Weeks of Gestation in A Tertiary Care Centre

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Abstract:

Background and Objectives: The present study was done to determine the total number of antepartum and intrapartum fetal deaths; to know the probable etiology and management of the same, and to study the role of antenatal care in prevention of IUFD.

Methods: Prospective study was undertaken and 73 cases were studied, at PMCH Patna. All the cases of IUFD attending antenatal clinic, studied. (May 2018 – Feb 2019).

Results: The fetal death rate was 35.09/1000 births. Major causes of IUFD were PE and eclampsia (32.88%) and abruptio placenta (20.55%). Majority were term gestations (30.13%) and birth weight <2.0 kg (28.76%). Risk of IUFD was significantly less in booked patients than in un booked patients.

Conclusion: Present study showed that majority of IUDs was preventable. Pre-eclampsia and abruption which are the major causes of IUD can be reduced by improving the socio- economic status of people, proper antenatal care and timely admission of the patient, thorough monitoring and timely intervention.

Keywords: Intrauterine fetal death; Prevention; Antenatal care; Risk factors; Etiology.

Introduction

The death of a fetus is one of the unhappy events in the field of obstetrics. It is really distressing when it occurs without warning in a pregnancy that has previously seemed entirely normal[1]. It is an event that challenges both the medical and personal skill of the doctor. It is thus vital to identify specific probable causes of fetal death to determine the risk of recurrence, prevention or corrective action[2]. Fetal loss is a sensitive indicator of maternal care during antenatal period. It directly reflects the obstetrician's vigilance kept during particular pregnancy. For an obstetrician, documentation of primary event or factor which has led to fetal death is of paramount importance[3]. Only when probable etiology is known the patient can be given guidance for the treatment, prevention of recurrence as required. Illiteracy, poor socioeconomic condition and social status of women and misbeliefs are important contributory factors responsible for higher fetal mortality rate, as all these prevent women to go to the hospital for health check-up. One should appreciate that the grief response following stillbirth is severe and is similar to that following loss of an adult family member. It is probably most traumatic experience a woman undergoes in her life and it takes about months for a woman to return to normal routine life [4]. Since many attempts have been made to lower the death of new born babies with the help of rapidly advancing intensive neonatal care unit, neonatal death rate is reduced in developed countries. A small reduction in perinatal mortality rate is due to reduction in the infant mortality rate and not because of fetal mortality. So, attentionis now drawn towards the unborn babies in utero in order to get a live baby and so thatperinatal mortality can be further reduced. Newer techniques of diagnosis and a better understanding of patho - physiology have led to the determination of cause of death in a greater proportion of fetal deaths than in the past [5]. The importance of determining the cause of fetal death is that only when the cause is known, the patient can be councelled about the chance of recurrence and attempts at prevention or treatment can be initiated. Some of these such as syphilis is no longer a problem now, eclampsia is also preventable and fetal deaths due to pre-eclampsia are also preventable to some extent,by good antenatal care. Fetal deaths due to Rh-isoimmunization can be detectable and in many cases are preventable [6]. Fetal deaths due to diabetes also can be prevented.Some events such as cord accidents have remained relatively

unchanged for decades. Fetal mortality—the intrauterine death of a fetus at any gestational age—is considered a major but often overlooked public health issue. It is estimated that thereare more than 1 million fetal losses each year in the United States, and most occurbefore 20 weeks' gestation. Fetal mortality data from the National Vital Statisticssystem are usually presented for fetal deaths at 20 weeks' gestation or older (MacDorman, 2012). Using this definition, there are nearly as many fetal deaths asinfant deaths [7]. Fetal deaths rates at 20 weeks or more are gestational-age related, reaching a nadir that plateaus between approximately 27 and 33 weeks. Following this, there is a progressive rate increase.

Objectives

1. To know the incidence of intra-uterine fetal death.
2. To know the probable etiology for antepartum and intrapartum fetal deaths. To study the management of the same.
3. To study the role of antenatal care in prevention of intrauterine fetal deaths

Material and Methods

A prospective study is undertaken in which all the cases of intra- uterine fetal death either with ultrasound reports proving IUD or diagnosed on clinical examination by absence of fetal heart rate and fetal movements were studied. Study period: From May 2018 to April 2019.

Inclusion criteria

All cases of IUD with gestational age > 20 weeks.

Exclusion criteria

All cases of IUD with gestational age < 20 weeks. Minimum number of cases: 50 cases

All the cases of intra- uterine fetal death which come to the above mentioned hospital during the study period are studied. The age, parity, literacy, socio-economic status of these patients were recorded. Detailed obstetric history, details about present complaints and duration, present pregnancy, past obstetric performances and outcomes (including previous abortions, previous IUFD, associated toxemias, etc.,) were studied. Details of ante- natal check- ups, medical illness, presence of ante patum hemorrhage, pregnancy induced hypertension, eclampsia, severe anemia and other significant illnessin the present study were noted.

Those patients who had attended antenatal clinic at least thrice before delivery were considered booked cases.Clinical examination is done. General condition of the patient and initial parameters were noted. Abdominal examination was done for height of uterus, tone of uterus, presentation and position of fetus, liquor and its quantity. Absent FHS is noted. An USG examination was done to confirm the diagnosis of intrauterine fetal death and to note any possible causes of the IUD . Mode of delivery and birth weight of fetuses were noted. All the fetuses were examinedfor any malformations, each placenta was checked for its appearance, weight, retro-placental clot/infarcts and calcification.

Results

Table 1: Total Intrauterine deaths

	Total No. ofdeliveries	Total No. of IUDS	Still birth rate (per1000 birth
Total	2080	73	35.09

Still birth rate in this study is 35.09 / 1000 births.

Table 2: Antepartum and intrapartum still births

	Antepartum still birth	Intraparutm still birth
Total	73	0
Percentage	100%	0%

Antepartum deaths constitute of all still births in this study.

Table 3: Education Status

	Number	Percentage
Uneducated	33	45.21
Primary	25	34.25
Elementary	05	6.85
Secondary	08	10.96
Tertiary	02	2.74

Among total 73 patients in this study, 33 were uneducated (45.21%) followed by34.25% in the primary education group.

Table 4: Socio economic Status (Revised B.G. Prasad Classification of SES, 2016)

Social Class	Number	Percentage
I (Upper Class)	0	0
Ii (Upper Middle Class)	0	0
Iii (Middle Class)	4	5.48
Iv (Lower Middle Class)	29	39.73
V (Lower Class)	40	54.79

In this study 54.79% (40) patients belong to the lower SES.

Table 5: Religion

	Number	Percentage
Hindu	25	34
Muslim	41	56
Christian	5	7
Others	2	3

Table 6: Marriage Differences

Marriage Type	Number	Percentage
Consanguineous Marriage	32	43.84
Non Consanguineous Marriage	41	56.16

Table 7: History of Previous Pregnancy

Pregnancy Type	Number	Percentage
Uneventful Obstetric History	59	81.94
Bad Obstetric History	14	18.06

Table 8: Mode of Previous Delivery

Mode of Delivery	Number	Percentage
Vaginal Delivery	30	55.56
LSCS	24	44.44

Table 9: IUDs and antenatal care

Antenatal care	Total	Percentage
Booked	24	32.88
Unbooked	49	67.12
Total	**73**	**100**

In our study, IUDs were seen in more in unbooked cases 49 (67.12%), than inbooked cases 24 (32.88%).

Table 10: Type of delivery

Mode of delivery	Total	Percentage
Vaginal	57	78.08
LSCS	15	20.55
Laparotomy for rupture uterus	1	1.37

In our study, 57 patients (78.08%) delivered vaginally, 15 patients (20.55%) required LSCS and laparotomy was done in 1 patient (1.37%).

Table 11: Insufficient ANC and IUDs

Sl. No.	Factors	No.of cases	Percentage
1	Abruptio placenta	10	20.41
2	Cord prolapse	1	2.04
3	Prolonged labour & obstructed labor	1	2.04
4	Placenta praevia	2	4.08
5	Pre eclampsia	12	24.49
6	Eclampsia	6	12.24
7	Anemia	2	4.08
8	Rupture uterus	1	2.04

9	Unexplained	10	20.41
10	Transverse lie with hand prolapse	1	2.04
11	Breech presentation	2	4.08
12	Postmaturity	1	2.04
	Total	**49**	

49 patients were unbooked (67.12%). 24.49% of unbooked cases were patientsof pre- eclampsia and 20.41% were cases of Abruptio Placenta & unexplained causes followed by Eclampsia (12.24%).

Discussion

Incidence of Stillbirths in some other studies is as below: Present study is comparedwith the following studies.

1. Ravikumar M.& Anjana Devi Jan 1992 – Dec. 1994 – Jipmer, Pondicherry.
2. Kumari C. et al 11 Jan 1997 – Dec. 1998, Mumbai.
3. Arun Nayak & Asha Dalal . Jul 1987 – Jan 1991, Bombay
4. Lucy D, et al April 1992 – March 2002, Orissa.
5. Vaishali et al Jan 2002 – Dec 2005, Pune.

Table 12:

Sl. No.	Author	Incidence (per 1000 births)
1	Ravikumar M. et al [8] Jan 1992 – Dec. 1994	43/1000
2	Nayak et al [9] Jul 1987 – Jan 1991	23.4/1000
3	Vaishali N., et al [11] Jan 2002 – Dec 2005	35.2/1000
4	Lucy D. et al [10] April 1992 – March 2002	46.38/1000
5	Kumari C. et al [12] Jan 1997 – Dec. 1998	64.1/1000
6	**Present study** may 2018 to april 2019	**35.09/1000**

Still birth rate is same in the present study when compared to the study of Vaishali et al butlower when compared to Kumari C. et al, Lucy D. et al and Ravikumar M. .

Birth weight and gestational age distribution of IUDs: In the present study, maximum number of IUDs occurred in gestational age 37- 42 weeks (30.13%). Ravikumar et al .8 stated very high incidence of stillbirth between 37 – 42 weeks(51 %) whereas Vaishali et al [11] quoted 26.04 %.

Age distribution and IUDs: In our study, most of the patients were in the age group of 21 – 30 years. Maximumnumbers of IUDs in various studies are in age group 21-30 years.

Table 13:

Study	No of Still Births	Percentage
Arun Nayak and Asha Dalal [9]Jul 1987 – Jan 1991	90/125	72%
Lucy D. et al [10] April 1992 – March 2002	2439/3657	66.69%
Vaishali N. et al [11] Jan 2002 – Dec 2005	55/93	59.1%
Present study may 2018 to april 2019	**50/73**	**68.49%**

Table 14: Parity and IUD:

Study	Primi (%)	Multi (%)
Kumari C. et al [12] Jan 1997 – Dec. 1998	14/40 (36.8%)	26/40 (63.2%)
Lucy D. et al [10] April 1992 – March 2002	1785/3657(48.81%)	1872/3657 (51.19%)
Vaishali N. et al [11] Jan 2002 – Dec 2005	45/93 (48.3%)	48/93 (51.6%)
Present study mat 2018 to april 2019	**29/73 (39.73%)**	**44/73 (60.27%)**

The relation between parity and incidence of IUDs corresponds to the other study.

Table 15: IUDs and antenatal care :

Study	Booked (%)	Unbooked (%)
Kumari C. et al [12] Jan 1997 – Dec. 1998	7 (18.4%)	31 (81.5%)
Lucy D. et al [10] April 1992 – March 2002	1003 (27.42%)	2654 (72.58%)
Vaishali N. et al [11] Jan 2002 – Dec 2005	14 (15.1%)	79 (84.9%)
Present study may 2018 to april 2019	**24(32.88%)**	**49 (67.12%)**

A higher percentage of IUD has occurred in booked cases of other institutions in our study when compared to other studies. This may be delay in referral or failure of timely admissionof the patient.

Table 16: Mode of delivery

Study	VaginalN (%)	LSCS N (%)	LaparotomyN (%)
Kumari C. et al [12] Jan 1997 – Dec. 1998	34/40 (89.4%)	6/40 (10.6%)	-
Vaishali N. et al [11] Jan 2002 Dec 2005	68/93 (73.1%)	23/93 (24.75%)	2/93 (2.15%)
Present study may 2018 to april 2019	**57/73(78.08%)**	**15/73 (20.55%)**	**01/73 (1.37%)**

The modes of delivery and the percentage of LSCS is same and comparable to study byVaishali N. et al. [11]

Table 17: Incidence of abruption placenta

Study	No. of cases	Percentage
Vaishali N. et al [11] Jan 2002 – Dec 2005	21/96	21.9%
Ravikumar and Anjana Devi [8]. Jan 1992 – Dec. 1994	54/552	9.8
Kumari C. et al [12] Jan 1997 – Dec. 1998	9/40	22.5
Present study may 2018 to april 2019	**15/73**	**20.55**

Abruptio placenta is one of the major cause of still birth and its incidence corresponds to thestudy of Kumari C. et al [12], and Vaishali N. et al [11].

Table 18: Placenta praevia

Study	No. of cases	Percentage
Ravikumar and Anjana Devi[8] Jan 1992 – Dec. 1994	22/552	4.0
Vaishali N. et al [11] Jan 2002 – Dec 2005	2/96	2.1
Kumari C. et al [12] Jan 1997 – Dec. 1998	1/40	2.5
Present study may 2018 to april 2019	**03/73**	**4.11**

The incidence of placenta previa as a cause of still birth in the present study is low ascompared to other studies.

Table 19: Incidence of unexplained causes of still birth

Study	No. of cases	Percentage
Vaishali N. et al [11] Jan 2002 – Dec 2005	18/96	18.8
Ravikumar and Anjana Devi [8] Jan 1992 – Dec. 1994	197/552	35.7
ArunNayak and AshaDalal [9] Jul 1987 – Jan 1991	14/125	11.2
Present study may 2018 to april 2019	**16/73**	**21.91**

The incidence in the present study is higher than other studies, but lower than the study byRavikumar et al [8].

Conclusion

Early detection of pre- eclampsia by regular ANCs and its treatment can reduce its complications including IUD and abruptio placenta in few cases thereby furtherreducing the stillbirth rate. Death of the fetuses due to congenital anomalies and deaths due to cord accidents cannot be prevented totally.

All other factors can be prevented from causing IUD by proper care during pregnancy and undertaking induction of labour at an optimum time. Timely admission of the patients can reduce the stillbirth rate. The factors which prevent timely admission to a center where facilities are available include unavailabilityof proper transportation facilities and also in many of the patients, the financial constraint. Education of the patient to avail obstetric care, proper planning of mid wives visits to pregnant women, more frequent visits for high risk pregnancies, timely reference to specialist will minimize fetal wastage.

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