CAUSES OF INTRA UTERINE FOETAL DEATH

Shagufta Shaheen, Shahnaz Akhtar

Department of Obstetrics and Gynaecology,
Postgraduate Medical Institute, Lady Reading Hospital, Peshawar

ABSTRACT

Objective: *To find out the frequency and causes of intra uterine foetal death and associated congenital anomalies.*

Material and Methods: *This prospective study was conducted at department of Obstetric and Gynecology, Lady Reading Hospital, Peshawar from 1st January 1997 to December 1997. In this study death of the foetus in-utero after 28 weeks of pregnancy was taken and death of the foetus during labour was excluded.*

Results: *During the time period the total number of deliveries was 3220 and the total number of patients with intra-uterine foetal death was 302 (9.37%). Among 302 cases there were 296 singleton pregnancies (98.01%), while six (1.98%) were multiple gestation pregnancies with both the foetuses dead. The most common cause of intrauterine foetal death was antepartum hemorrhage (APH) in 72 cases (23.84%) followed by preeclampsia in 29 (9.60%) cases, eclampsia in 16 (6.29%) cases, diabetes in 45 (14.90%) cases, congenital anomaly in 60 (19.86%) cases, infections in 42 (13.90%) cases, cord prolapse in 10 (1.31%) cases, Rh-incompatibility in 8 cases (2.64%), and no cause was found in 20 cases. Most common congenital anomalies were anencephaly (10.26 %) and hydrocephalus (4.30 %).*

Conclusion: *Advanced maternal age and multigravidity was associated with increase risk of intra-uterine foetal death. Higher incidence of APH, Pre-eclampsia, eclampsia, diabetes and congenital anomalies showed lack of antenatal care. Antenatal care is by far the most important step in the prevention of intra-uterine foetal death.*

Key Words: *Intra-uterine Foetal Death, Causes, Frequency, Congenital Anomalies.*

INTRODUCTION

A universally agreed upon definition of intrauterine foetal death is the death of feotus in utero after 28 weeks of pregnancy and before the birth of the baby. Intra-uterine foetal death is one of the leading problems faced by obstetricians during their routine practice.[1-3] It is essential that the cause of death be determined and remedial measures taken whenever possible to prevent recurrence.

Whenever a foetus dies in utero it is usually followed by expulsion of the foetus from the uterus within a few days. However in exceptional cases the dead foetus is not expelled from the uterus at once but is retained for several weeks causing hypofibringogenaemia. Gradual liberation of thrombo-plastin by the dead tissue causes consumption of clotting factors resulting in disseminated intra-vascular coagulation and rapid release of fibrin degradation products.[1,3-5]

MATERIAL AND METHODS

This prospective study was conducted in Gynae-A unit of Postgraduate Medical Institute/Lady Reading Hospital, Peshawar from January 1997 to December 1997. All the patients in this study were admitted in this unit through outdoor patient department and private clinics. They were all admitted in antenatal ward in Gynae A unit labour room and kept there till management. Some of the patients came as diagnosed cases along with their ultrasound results while rest of the patients were diagnosed by doing ultrasonography (USG) in the hospital Radiology department. In this study, the death of the foetus in-utero after 28 weeks of pregnancy was taken and death of the foetus during labour was excluded. Detail questionnaire including the following parameters was designed.

Age, socioeconomic condition, gravidity, parity, period of gestation, previous mode of

AGE DISTRIBUTION

Age	No. of Cases n=302	Percentage
Teenage pregnancy	20	3.93 %
20-40 years of age	227	75.16 %
Above 40 years of age	55	18.2 %

Table 1

PERIOD OF GESTATION

Gestation in weeks	No. of Cases n=302	Percentage
Pre-term (28-36 weeks	61	21.19 %
Term (37-41 weeks)	214	70.86 %
Post-term > 42 weeks	27	8.94 %

Table 2

deliveries, history of previous abortion, history of previous still birth, history of premature labour, Rh incompatibility, foetal anomalies, previous caesarian section, history of any major surgery, history of injection at home, manipulation by Dai, history of leaking membranes, chorio-amnionitis and previous history of APH. At the time of admission detail examination was performed. Duration of gestation was assessed. Full investigations including blood group and Rh factor, Hb%, urine R/E, coagulation profile, blood sugar, USG, protein, urea, creatinine and Toxoplasmosis were performed and treated accordingly.

RESULTS

During the time period the total number of deliveries was 3220 and the total number of patients with intra-uterine foetal death was 302 (9.37%). Out of 302 patients, 20 patients had teenage pregnancy and 55 cases were of age above 40 years (Table-I).

Among the 302 cases collected, 61 (21.19%) were found to be pre-term and 214 (70.86%) were full term cases (Table-2). Primigravida were 45(14.90%). Multigravida patients were 200(66.22%) and grand multigravida were 40 (13.24%) patients (Table-3). There were 308 babies born to 302 women as 6 (1.98%) women had twins babies (Table-4). Total numbers of males were 144 and females were 164 (55.29%). Premature babies were 121 (40.06%) and 145 (40.01%) babies were of weight between 2.5 and 3.9 kg.

GRAVIDITY

Gravidity	No. of Cases n=302	Percentage
Primigravida	45	14.90 %
Multigravida	200	66.22 %
Grand multigravida	40	13.24 %
Great grand multigravida	17	5.62 %

Table 3

Foetal risk factors were identified in 78 cases and 20 cases were of unknown etiology. (Table-5). Congenital Anomalies were present in 60 cases, cord prolapse in 10 cases and Rh-Incompatibility in 8 cases. Total number of macrosomic babies was 42 (13.90%). Most common congenital anomalies were anencephaly (10.26 %) and hydrocephalus (4.30 %) {Table6}.

Maternal risk factors were identified in 254 (92.3%) case (Table-7). Preeclampsia was found in 29(9.60%), Eclampsia in 16(6.29%), APH 72 cases, Diabetes in 45 cases (14.90%), Infection 42 cases (13.90%).

DISCUSSION

The total number of Intra-uterine deaths in this study was 302 making frequency of intra-uterine in singleton (9.37%), while incidence of twin intrauterine foetal death was 1.98%. In this study significant number (71.16%) of intrauterine foetal deaths occurred in patients, who were of age between 20-40 years.[6] The percentage of patients above 40 years of age being 18.2% while in one study by E. Raymond in Sweden the percentage of patients above 40 years of age was 15.1%. In the same study and in several studies in different populations (Kiely) nulliparity was associated with increased risk of intrauterine foetal death[7] while in our study multigravidity was associated with increased risk of intrauterine foetal death. The this study supports the evidence that advance maternal

SEX AND WEIGHT OF THE BABIES

		No. of Cases n=308*	Percentage
Sex	Male	144	47.68 %
	Female	164	55.29 %
Weight	≥4 kg	42	13.90 %
	2.5-3.9 kg	145	48.01 %
	<2.5 kg	121	40.06 %

* Six cases out of 302 had Twin pregnancies.

Table 4

INTRAUTERINE DEATHS: FOETAL FACTORS

Intrauterine Deaths Foetal factors	No. of Cases n=98/302	Percentage
Congenital Anomaly	60	19.86 %
Cord Prolapse	10	3.31 %
Rh-Incompatibility	8	2.64 %
Unexplained	20	6.62 %

Table 5

CONGENITAL ABNORMALITIES

Type of abnormality	No. of Cases n=60	Percentage
Anencephalic	31	10.26 %
Hydrocephalus	13	4.30 %
Hydrops fetalis	8	2.64 %
Meningocele	2	0.66 %
Spina bifida	6	1.98 %

Table 6

age and high gravidity are two major risk factors for intrauterine death.[8,9]

Frequency of preeclampsia responsible for intrauterine death has been reported up to 1 %[10-12], while in our study frequency of preeclampsia was 9.60 %. Frequency of eclampsia in our study responsible for intrauterine death was 6.29 %. In recent studies essential hypertension has been identified more accurately to be present in at least 10%. Tuck S.M et al (1988)[13] has given as incidence of 12% while in our study incidence of essential hypertension was in forty-five patients (14.9%).

Diabetes is the second commonest medical disorder (after hypertension) complicating pregnancy with an incidence of about 1%[14,15] while in our study diabetes responsible for intrauterine death was present in 14.90% (45 cases).

The incidence of low birth weight babies in our study was (40.06%) and majority were due to prematurity. Tabussum et al[16] also found the indication of prematurity. While incidence of macrosomic babies was 13.90%. Kirz DS et al (1985)[17] and Bobrowski and Bottoms (1995)[18] also found increased frequencies of macrosomic babies for older and multiparous women. Incidence of post-term pregnancy is reported to be between 3.5% and 14%,[10,19] while in our study it was 8.94%.

In our study incidence of APH was 23.84% (abruptio placenta (7.28%) placenta previa (16.55%), while in a study by Martinek IE[20] placental abruption was responsible for 7.5% in-utero foetal death.

In this particular study 60 (19.86%) patients gave birth to congenitally malformed babies, while in a study by Naeye (1983)[21] the incidence of congenitally malformed babies was 14%.

In our study their were 30 (9.93%) patients with previous history of still birth, while in a study by Mary E. Crowther on 48 Caucasian, pregnant women, 28 had a previous stillbirth.[2,]

In United Kingdom (1993) in one study of 388 intrauterine deaths 54% were boys. In that study gestational age ranged from 30-44 weeks but only a small number (7%) were pre-term (<37 weeks). The mean birth weight was 3.5 k.g, 3% of baby were more than 4 k.g. while in our study 47.18% were boys, the gestational age ranged from 28- > 42 weeks, 21.19% were pre-term, the mean birth weight was 3.2 k.g and 13.90 % were more than 4 k.g.

CONCLUSION

It is concluded from this prospective study that incidence of intrauterine foetal death was quite high. Advanced maternal age and multigravidity was associated with increase risk of intra-uterine foetal death. Higher incidence of

INTRAUTERINE DEATHS: MATERNAL FACTORS

Intrauterine Deaths: maternal factors.		No. of Cases n=204/302	Percentage
Pre-eclampsia		29	9.60
Eclampsia		16	6.29
Antepartum hemorrhage		72	23.84
	Placental Abruption	22	7.28
	Placenta previa.	50	16.55
Diabetes		45	14.90
Infections	Premature rupture of membrane, Toxoplasmosis, Malaria, Typhoid	42	13.90

Table 7

APH, Pre-Eclampsia, eclampsia, diabetes and congenital anomalies was associated with lack of antenatal care.

REFERENCES

1. Whitfield CR. Dewhurst's text book of Obstet Gynaecol (5th ed.) 1995, Blackwell science Publications.
2. Crowther ME. Communication following a still birth or neonatal death. Br J Obstet Gynaecol 1995 102; 952-6.
3. Bocciolone L, Meroni P, Parazzini F, Tincani A, Radici E, Tarantini M, et al. Antiphosphospholipid antibodies and risk of intrauterine late foetal death. Acta Obstet Gynaecol Scand 1994; 73(5): 389-92.
4. McColl MC, Ellison J, Reid R, Tait RC, Walker ID, Greer IA. Prothrombin 20210G-> A, MTHFR C677T mutations in women with venous thrombo-embolism associated with pregnancy. Br J Obstet Gynaecol 2000; 107:565-569.
5. Ahlenius I, Floberg J, Thomassen P. Sixty six cases of intrauterine foetal death. A prospective study with an extensive test protocol. Acta Obstet Gynaecol Second. 1995 Feb; 74(2): 109-17.
6. Achanna S, Monga D. Performance of elderly primigravidae in kelantan. Med J Malaysia, 1995:50:37-41.
7. Bobrosski RA, Bottoms SF. Under-appreciated risks of elderly multipara. Am J Obstet Gynaecol 1995:172:1764-70.
8. Spencer K, Spencer CE, Power M, Moakes A, Nicolaides KH. One stop clinic for assessment of risk for foetal anomalies; a report of the first year of a prospective screening for chromosomal anomalies in the first trimester. Br J Obstet Gynaecol 2000; 107: 1271.
9. American Academy of Pediatrics: AAP 2001 Red Book; Report of the Committee on Infections Diseases. 26th ed. 2001.
10. Donald I, 1995. Practical obstetric problems (5th ed.) B.I. Publications. H.I.J. Wildschut Sociodemographic factors. W.B Saunders company limited.
11. Odendaal HJ, Steyn DW, Norman K, Kirsten GF, Smith J, Theron GB. Improved perinatal mortality rates in 1001 patients with severe pre eclampsia. S Afr Med J 1995; 85(10 suppl); 1071-6.
12. Moyo SR, Tswana SA, Nystrom L, Bergstrom S, Blomberg J, Ljungh A. Intrauterine death and infections during pregnancy. Int J Gynaecol Obstet. 1995: 51: 211-8.
13. Tuck SM, Yudkin PL,Turnbull AC. Pregnancy outcome in elderly primigravidae with and without a history of infertility. Br J Obstet Gynaecol. 1988;95:230-7.
14. Abena Obama MT, Shasha VW, Fodjo J, Bonongkaho F, Mbede J, Kamdom Moyo J. Foetal macrosomia in cameeroon: prevalence, risk factors and complications. West Afr J Med 1995: 14: 249-54.
15. Gaucherand P, Rudigoz RC, Piacenza JM. Monofetal death in multiple pregnancies: risks for the co twin, risk factors and obstetrical management. Am J Hum Genet 1995; 56: 1173-8.
16. Tabussum G, Karim SA, Khan S, Naru TY. Preterm birth its etiology and outcome. J Pak Med Assoc. 1994; 44: 68-70.
17. Kirz DS, Dorchester W, Freeman RK. Advanced maternal age: The mature gravida. Am J Obstet Gynecol 1985; 152: 7-12.
18. Bobrowski RA, Bottoms SF. Underappreciated risks of elderly multipara. Am J Obstet Gynecol 1995; 172: 17641770.
19. Cunningham FG, MacDonald PC, and Gant NF, eds. Williams Obstetrics. 19th ed. 1993 Prentice hall International Inc.
20. Martinek IE, Vial Y, Hohlfeld P. Management of in utero foetal death: Which assessment to undertake? J Gynecol Obstet Biol Reprod (Paris). 2006 Oct;35(6):594-606.
21. Naeye RL. Maternal age, obstetric complications, and the outcome of pregnancy. Obstet Gynecol 1983;61(2):210-6.

Address for Correspondence:
Dr. Shagufta Shaheen
Department of Obstetrics and Gynaecology,
Postgraduate Medical Institute,
Lady Reading Hospital, Peshawar.