International Journal of Science Academic Research
Vol. 05, Issue 06, pp.7602-7605, June, 2024
Available online at http://www.scienceijsar.com

ISSN: 2582-6425

Research Article

INTRA UTERINE FETAL DEATH AT BENGHAZI MEDICAL CENTRE, 2019-2021

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Received 18th April 2024; **Accepted** 27th May 2024; **Published online** 21st June 2024

Abstract

Introduction: Intra Uterine Fetal Death (IUFD) is tragic event for the parents and obstetrician. Identification of causes of IUFD will be helpful in counseling of parents as well as for formulating preventive measures. **Aim:** To study the causes of Intra Uterine Fetal Death (IUFD) and associated complications. **Methodology**: A retrospective cross-sectional study include all medical records of all women admitted for delivery in the obstetrics and gynecology department at Benghazi medical center (BMC), who had intra uterine fetal death, from 1st of Jan 2019- to 1st of Dec.2021. **Results:** The study included 184 patients who had IUFD admitted to hospital during 3years period, in 2019, there were 14,107 delivery 105 of them was IUFD, live with rate 7.5/1000 live births during 2020 there were 14,593 deliveries in the hospital and 47 was IUFD with rate 3.2/1000 live births and in 2021 there were 12298 delivery 32was IUFD, with rate 2.6/1000 live birth and the rate in 3 yearswas4.5/1000live birth. Age of mothers ranged between 14 and 47years with mean 31.6±6.4years. Pregnancy was spontaneous in 98.4% and assisted in 1.6%. Booking was recorded in 96.7%. ANC follow up was regular in 81.5%. Majority (82.1%) of patients was healthy. Neonatal death was recorde in previous delivery in 2.7% and 0.5% fetal death. Type of termination of pregnancy 76.1% vaginal delivery and 23.9% by C/S. More than half (64.7%) unexplained cause of death, 10.9% due to placental cause, 9.2% maternal cause, 5.4% fetal cause, 6.4% due to problem in the cord and 3.3% due to thick meconium. Majority of mothers had good outcome and discharged well. Recommendations**:** Identify the pregnant at risk, screening, the treatment of diseases during pregnancy and encourage early and sufficient visits are necessary in view of reducing prevalence of fetal death in our community. Further research is needed to understand the mechanisms involved in such maternal factors in order to develop preventative strategies.

Keywords: Fetal Death, Medical.

INTRODUCTION

The United States Center for Health Statistics defines a fetal death as the delivery of a fetus showing no sign of life, as indicated by absent breathing, heartbeats, pulsation of the umbilical cord, or definite movements of voluntary muscles, irrespective of the duration of pregnancy. Stillbirth is a fetal death after a defined gestational age and/or fetal weight, both of which have historically lacked uniformity. Currently, the most recognized definition of stillbirth is a fetal death that occurs at or greater than 20 weeks gestation or at a birth weight greater than or equal to 350 grams. Standardization of the definition of stillbirth is a current priority. In the United States, termination of pregnancy for fetal anomalies and labor induction for pre-viable premature rupture of membranes are reported as terminations of pregnancy and not as stillbirths. "Stillbirth" has replaced "intrauterine fetal demise" as the terminology of choice based on the opinions of parent groups. An attempt is now underway to use stillbirth in all scientific publications. For this publication, intrauterine fetal demise and stillbirth are considered interchangeable.[1] Intrauterine fetal demise is the 5th leading cause of death worldwide. There is currently a limited understanding of the pathophysiology responsible for fetal demise.[2,3] A fetal death is defined by the World Health Organization as death prior to birth (ie, expulsion or extraction of the baby from the mother) at any gestational age.

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The standardized definition for fetal mortality used by the United States National Center for Health Statistics (NCHS) is similar and adds that stillbirth is indicated by the absence of breathing, heart beats, pulsation of the umbilical cord, or definite movements of voluntarymuscles.[4] The incidence of fetal death varies according to maternal race. The rate is higher in black compared to white women (12.5 versus 5.8 per 1000 births, respectively, in the United States) .[5] Although all racial groups in the United States have been experiencing a decrease in fetal death rate, the fall has been greater in whites than blacks (30 versus 16 percent between 1980 and 1998) .[5,6]

Demographic factors

Several maternal demographic Factors are associated with an increased risk of intrauterine fetal demise. In one large multicenter study, a higher rate of fetal death compared to controls was observed for age 35 years (odds ratio 3.5), weight 85 kg (187 pounds) (OR 2.1), black race (OR 1.6), single marital status (OR 1.6), and smokers (OR 1.5) .[7] These demographic risk factors are further illustrated by the following examples: Advanced maternal age is a risk factor for stillbirth, even after excluding coexisting medical conditions .[8,9]As an example, one study of pregnancy outcomes in women aged 35 to 40 years found a 1.4-fold increase in stillbirth compared to younger women; the increase was 2.4-fold higher in women over age 40. [8] The same authors noted no increased risk of fetal mortality in women less than 18 years of age,[10]. In another report, older women had a significantly higher risk for unexplained fetal death .[11] The relationship of pre-pregnancy body-mass-index (BMI) to late fetal death was examined in a

population-based cohort of 167,750 Swedish women .[12] Among nulliparous women, the odds ratios for late fetal death increased threefold among women with BMI values 25 to 29.9 and fourfold in women with BMI 30 as compared to lean women. The mechanism(s) for this association is not known. The fetal death rate in single women is twice as high as in married women (11.4 versus 6.0 per 1000 births) .[13] The higher stillbirth rate among unmarried women may be more closely related to a relatively disadvantaged status than to their marital state. Unmarried mothers, for example, are more likely to be black and have poorer socioeconomic situations and inadequate prenatal care compared to married women .[14] Smoking is associated with several adverse pregnancy outcomes, including stillbirth, abruption, and fetal growth restriction.[13,15] High parity, long interpregnancy interval, and years of maternal education are other purported risk factors for fetal death in some [14,17-20],[13,16-19] but not all, studies .[7]

Aim of study

To study the causes of Intra Uterine Fetal Death (IUFD)and associated complications.

METHODOLOGY

Study Design

Type of study: A retrospective cross-sectional study include all medical records of all women admitted for delivery in the obstetrics and gynecology department at Benghazi medical center (BMC), who had intra uterine fetal death, from 1st of Jan 2019- to31st of Dec.2021.

Data collection

Full medical and obstetric history was taken from all medical record of patients. Data as demographics, relevant obstetric data was collected using data recording sheets.

Data Analysis

Data will be analyzed using (SPSS) statistical package of social science program version 23. The statistical analysis included: Descriptive Statistics: Including (Mean value, Standard deviation, Number and Percentage. Data will be presented in form of tables and figures, where the figures will be done by Microsoft Excel 2010.

Results

Table 1. Distribution of patients according to year of admission

Year of admission	No.	%
2019	105	57.1
20220	47	25.5
2021	32	17.4
Total	184	100

Table .2 Distribution of patients according to age

Age /year	No.	%
≤20	6	3.3
21 – 30	82	44.6
31- 40	77	41.8
>40	19	10.3
Total	184	100

Mean age =31.6years. Std. Deviation =6.4 years.
Median=31 years. Minimum age= 14 years. Maximum = 47 years.

Table 3. Distribution of patients according to gestational age

Gestational age/week	No.	%
< 36	109	59.2
≥36	75	40.8
Total	184	100

Mean =3.1weeks. Std. Deviation =3.6weeks.
Median=34weeks Minimum =25 weeks

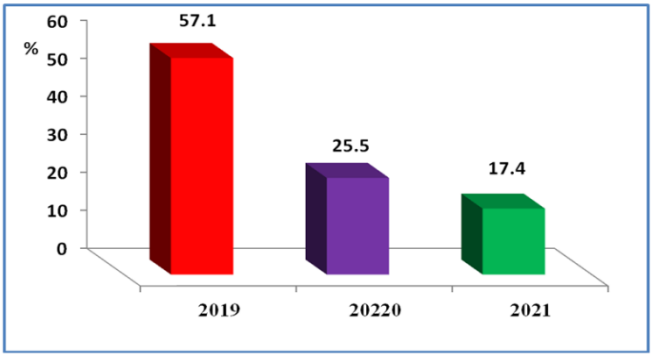

Fig. 1. Distribution of patients according to year of admission

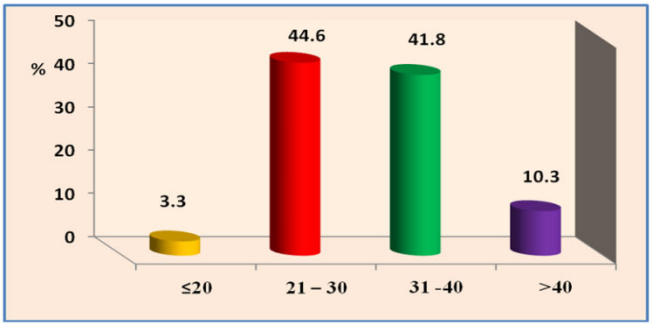

Fig. 2. Distribution of patients according to age

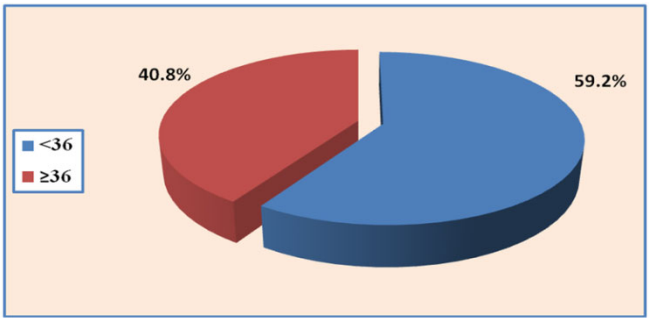

Fig. 3. Distribution of patients according to gestational age

Table 4. Maternal blood group

Blood group	No.	%
A+	46	25
O+	87	47.3
B+	15	8.2
AB+	11	6
A-ve	14	7.6
O-ve	9	4.8
AB-ve	2	1.1
Total	184	100

Table 5. Distribution of patients according to number of pregnancies

Gravid	No.	%
Primigravida	33	17.9
2-5	116	63
>5	35	19
Total	184	100

Mean =3.7. Std. Deviation =2.2. Median=3. Minimum =1. Maximum =14

Table 6. Distribution of patients according to parity

Parity	No.	%
Null – para	40	21.7
1-5	136	74
>5	8	4.3
Total	184	100

Mean 2.3 Std. Deviation =1.8. Median=2. Minimum = 0. Maximum =10

Table 7. Distribution of patients according to history of abortion

History of abortion	No.	%
No	132	71.7
Yes	52	28.3
Total	184	100

Table 8. Distribution of patients according to history of-C/S

C/S	No.	%
No	152	82. 6
Yes	32	17. 4
Total	184	100

Table 9. Distribution of patients according to type of pregnancy

Type of pregnancy	No.	%
Spontaneous	181	98.4
Assisted	3	1.6
Total	184	100

Table 10. Distribution of patients according to booking

Booking	No.	%
Yes	178	96.7
No	6	3.3
Total	184	100

Table 11. Distribution of patients according to ANC follow up

ANC follow up	No.	%
Regular	150	81.5
Irregular	27	14.7
No follow up	7	3.8
Total	184	100

Table 12. Distribution of patients according to past medical history

Past medical history	No.	%
No	151	82.1
Hypertension	5	2.7
Thyroid problems	5	2.7
Diabetes	10	5.4
PET	10	5.4
Epilepsy	2	1.1
HBV+ve	1	0.5
Total	184	100

Table 13. Distribution of patients according past surgical history

Past surgical history	No.	%
No	109	59.2
Appendectomy	22	12
C/S	30	16.3
E &C	12	6.5
Tonsillectomy	3	1.6
Breast surgery	3	1.6
Cholecystectomy	2	1.1
Laparotomy	2	1.1
D &C	1	0.5
Total	184	100

Table 14. History of drugs

History of drugs	No.	%
No	5	2.7
Tonics	152	82.6
Tonics and other	20	10.9
Other	7	3.8
Total	184	100

Table 15. Distribution of patients according to past obstetric history

Past obstetric history	No.	%
No	178	96.8
Fetal death	1	0.5
Neonatal death	5	2.7
Total	184	100

Table 16. Distribution of patients according to time of diagnosis

Time of diagnosis	No.	%
At admission	37	20.1
At labour	13	7.1
At follow up	14	7. 6
< one week	33	18
One week	36	19. 6
Two weeks	14	7. 6
>2weeks	37	20
Total	184	100

Table 17. Distribution of patients according to type-of-termination of pregnancy

Type of termination of pregnancy	No.	%
Vaginal delivery	140	76.1
C/S	44	23.9
Total	184	100

Table 18. Distribution of patients according to cause of fetal death

Cause of fetal death	No.	%
Maternal	17	9.2
Fetal	10	5. 4
Placental	20	10.9
Cord	12	6.5
Thick meconium	6	3.3
Unexplained	119	64.7
Total	184	100

Table 19. Distribution of patients according ante partum complication

Ante partum complication	No.	%
No	161	87.5
PET	12	6.5
Anemia	2	1.1
Diabetes	2	1.1
Not received anti D in first baby	1	0.5
Recurrent UTI	3	1. 6
PROM	2	1.1
Vaginal infection	1	0.5
Total	184	100

Table 20. Distribution of patients according maternal-outcome

Maternal outcome	No.	%
Discharged and well	176	95.7
Admitted	8	4.3
Total	184	100

Table 21. Distribution of patients according gender of baby

Sex	No.	%
Male	101	54.9
Female	83	45.1
Total	184	100

Table 22. Distribution of patients according type of pregnancy

Type of pregnancy	No.	%
Single	175	95.1
Twin	9	4.9
Total	184	100

Conclusion

The frequency of IUFD in the 3 years was 4.5/1000live birth. Age of mothers ranged between 14 and 47years with mean 31.6±6.4years. Mean of gestational age at delivery was 34.1± 3.6 weeks, with minimum gestational age 25weeks and maximum 43 weeks. Majority of patients had spontaneous pregnancy. Almost all of them were booked and majority had regular visits. Majority of patients was healthy, some had diabetes or hypertension. More than three quarter had vaginal delivery. Despite availability of modern intervention like non stress test, ultrasonography majority of causes of IUFD remains unknown. More than half had unexplained cause of IUFD. Majority of mothers had good outcome and discharged well. Early registration of pregnancy, regular ANC visits and early referral to tertiary cent remains keystone for prevention of complications of IUFD.

Recommendations

Identify the pregnant at risk, screening, the treatment of diseases during pregnancy and encourage early and sufficient visits are necessary in view of reducing prevalence of fetal death in our community. Further research is needed to understand the mechanisms involved in such maternal factors in order to develop preventative strategies.

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