

## Research Article

# Intra Uterine Fetal Death: Epidemiological Aspects and Maternal Prognosis in N'Djamena Mother and Child University Hospital

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**Abstract**

Intrauterine fetal death is the spontaneous cessation of fetal heart activity from gestational term  $\geq 14$ SA.

**Objective:** To analyze the risk factors in order to improve the prognosis of patients.

This was a descriptive and prospective study for a period of one (1) year, from 16 October 2018 to 15 October 2019, performed in N'Djamena Mother and Child University Hospital about intra uterine fetal death: epidemiological aspects and maternal prognosis. All patients admitted intra uterine death (term  $\geq 14$  SA) who agreed to participate in the study were included.

The frequency of IUFD was 2.6%. The age group of 20-24 years was the most represented with 31%. The majority of patients (67.3%), was referred. Main consultation reasons were absence of fetal movement with 21%. Malaria was the main etiology of IUFD with 31%. The majority of patients had had induced labor (84.5%), versus 15.5% with spontaneous labor. Means used for induction were: misoprostol (63.6%), oxytocin (17.3%), Balloon (3.6%). The majority of patients (94.6%) delivered by the vagina. Main complications of IUFD noted were: anemia (11.8%), amniotic infection (9.1%), Hemorrhage (4.5%), Clot disorder (3.6%). The maternal lethality rate was 3.6%.

Intra uterine fetal death is a frequent pathology in our regions. Main cause of IUFD is malaria. The treatment is often based on induction of labor with misoprostol.

**INTRODUCTION**

Intrauterine fetal death is the spontaneous cessation of fetal heart activity from gestational term  $\geq 14$ SA [1]. It is considered to be a failure in the course and monitoring of the pregnancy. Its worldwide incidence is estimated at 1.84% [2]. It is unevenly distributed throughout the world, ranging from 0.6% to 8.28% [3,4]. In Africa, data on intra uterine fetal death are scarce. The different series have focused on stillbirths, with a rate ranging from 3.69%-13.9% [5-7].

The diagnosis of intra uterine fetal death is often reported by patients who noted the absence of fetal movement. Confirmation of this is based on ultrasound. Obstetrical and psychological management remains a major attitude for the practitioner.

In Chad, there is few data on intra uterine fetal death despite its acuity. The aim of this study was to analyze the risk factors

in order to improve the prognosis of patients admitted for intra uterine fetal death in N'Djamena Mother and Child University Hospital.

**PATIENTS AND METHOD**

This was a descriptive and prospective study for a period of one (1) year, from 16 October 2018 to 15 October 2019, performed in N'Djamena Mother and Child University Hospital about intra uterine fetal death: epidemiological aspects and maternal prognosis. All patients admitted intra uterine death (term  $\geq 14$  SA), who agreed to participate in the study were included.

The sample size was calculated by Lorentz's formula.

$$n = q^2 \times p \times (1-p)$$

e<sup>2</sup>n: minimum sample size, q: confidence level (the typical value of the 95% confidence level will be 1.96) p: estimated

proportion of the population with the characteristic

The MFIU rate in Africa according to WHO= 4.1%, e = 5%

Sample size: 59

Studied variables were epidemiological, and clinical. Data was analyzed using Excel using SPSS 18.0.

## RESULTS

### Frequency

We recorded 110 patients admitted for intra uterine death among 4230 pregnant women giving a frequency of 2.6%.

### Age

The age group of 20-24 years was the most represented with 31%. The mean age was 26.1 year  $\pm$  1.2 with extreme of 17 years and 43 years (Table 1).

### Admission mode

The majority of patients (67.3%, n=74), was referred compared to the 32.7% (n=36), no referred.

### Gestational Term

Intra uterine fetal death had occurred more when the term was 23-31 gestational week representing 34.5% (Table 2).

### Inbreeding context

The majority of patients (73.6%, n=81), hadn't had inbreeding context versus 26.4% (n=29) with history of inbreeding context.

### Parity

Nulliparous: 31.8% (n=35)

Primiparous: 12.8% (n=14)

Pauciparous: 13.6% (n=15)

Multiparous: 20.9% (23)

Grandmultiparous: 23% (n=23)

### Obstetrical history

Main obstetrical antecedents were: intra uterine fetal death (21.8%, n=24), miscarriage (27.2%, n=30), abruption placenta (6.6%, n=7).

### Prenatal cares

0 antenatal meeting: 35.4% (n=39)

**Table 1:** Table represents of maternal age.

Age	n	%
≤ 19	26	23.6
20 – 24	34	31
25 – 29	21	19.1
30 – 34	18	16.3
≥ 35	11	10
<b>Total</b>	<b>110</b>	<b>100</b>

**Table 2:** Gestational Term.

Term (gestational week)	n	%
14-22	33	30
23-31	38	34.5
32-40	34	31
32-40	34	31
<b>Total</b>	<b>110</b>	<b>100</b>

1-4 anténatal meeting: 38.2% (42)

5-7: antenatal meeting: 11% (n=12)

≥ 8 antenatal meeting: 15.4% (n=17)

### Consultation' reasons

Main consultation' reasons were: absence of fetal movement (21%, n=23), pelvic pain (14.5%, n=16), uterine height regression (12.7%, n=14), metrorrhagia (12.7%, n=14),

### Aetiologies

Malaria was the main etiology of IUFD with 31% (Table 3).

### Type of labor

Bishop's score

The Bishop score was  $\geq$  7 in 74 patients (67.3%).

The majority of patients had had induced labor (84.5%, n=93). versus 15.5% (n=17). with spontaneous labor.

Means used for induction were: misoprostol (63.6%, n=70), oxytocin (17.3%, n=19), Balloon (3.6%, n=4).

### Delivery route

The majority of patients (94.6%, n=104), delivered by the vagina, compared to 5.4% (n=6), by caesarean section.

### Complications

Main complication of IUFD noted were: anemia (11.8%,

**Table 3:** Aetiologies.

Aetiologiesa	n	%
Malaria	34	31
Preeclampsia	12	11
Eclampsia	7	6.3
Urinary tract infection	9	8.2
Infection of the genital tract	6	5.4
Uterine rupture	1	0.9
Trauma	1	0.9
rhesus Incompatibility	4	3.6
Abruptio placenta	3	2.7
Praevia placenta	1	0.9
Oligoamnios/Anamnios	10	9.1
Idiopathic causes	22	20
<b>Total</b>	<b>110</b>	<b>100</b>

n=13), amniotic infection (9.1%, n=10), Hemorrhage (4.5%, n=5), Clot disorder (3.6%, n=4).

### Prognosis

We recorded 4 maternal deaths, giving a lethality rate of 3.6%.

## DISCUSSION

The frequency of intra uterine fetal death (IUFD), in this study was 2.6%. This is near to Razafindrafara' findings [8], in 2012 in Antananarivo, Madagascar, which reported the frequency of 2.96%. It is lower than those of Ignace et al. [5], in 2016 in Kamina, (Democratic Congo), and Tchaou et al. [6], in 2015 in Parakou, (Benin), which reported respectively 13.9% and 9.2%. However, it is higher than the data of Mohamed [9], in 2014 in Bamako, (Mali), and Amrouche [10], in 2017 in Bejaia (Algeria), which noted respectively 1.19% and 0.92%. Our result could be explained by the fact that N'Djamena Mother and Child University Hospital is the only national level III reference health facility in terms of reproductive health and management of obstetric complications including intra uterine fetal death.

The age group from 20-24 years was more represented with 31%. The average age of the patients was 25.8 years with extremes of 13 and 42 years. Young maternal age was also reported as a risk factor by Tchaou and et al. [6], in 2015 and Tajileki and et al. [11], in 2018 in Bunia, (Democratic Congo), who noted respectively 76.1% and 62.07% respectively of patients aged < 30 years.

When intra uterine fetal death is diagnosed the best attitude is to refer to a facility with can to solve complications. This remains valid in ours study where the majority of patients (67.7%), were referred. This result corroborates Ignatius and al findings [5], who obtained 57.6% referred patients

The notion of inbreeding is sometimes incriminated in the occurrence of intra uterine fetal death. Soulamani and et al. [12], in 2016 in Tiffet (Morocco), obtained a rate of 2.1% intra uterine fetal death among patients with the context of inbreeding compared with 0.9% intra uterine fetal death without contest of inbreeding. In This study, we recorded an inbreeding rate of 26.4%. Our result can be explained by the high rate of marriage among persons with the same family history.

Nulliparous were more represented with 31.8%. Several series highlight the predominance of intra uterine fetal death among nulliparous with a proportion ranging from 26.6% to 47% [9,10,13]. This finding could be explained by the vulnerability of the nulliparous who is likely to develop more malaria than the multiparous woman and the discovery frequent pre-eclampsia/eclampsia in nulliparous, both pathologies can lead to the intra uterine death.

Previous data showed a possibility of recurrence of MFIU with variable proportions [11,12]. Thus, Razafindrafara [8], noted 6.27% of patients with history of IUFD. Andriamandimbison and et al. [14], in 2013 in Antananarivo (Madagascar), Tchaou and et al. [6], obtained lower proportion respectively 5.33% and 1.5%. We reported a recurrence rate of IUFD of 21.8%. This difference could be explained by the high proportion of pathologies during

pregnancy such as malaria and preeclampsia responsible for IUFD.

According to WHO, the antenatal consultation is an opportunity to screen for fetal and maternal complications. The normal number of prenatal meeting is 8. It is therefore necessary to monitor pregnancies normally in order to ensure maternal and fetal well-being. Our finding diverge from the WHO recommendations with the high rate of antenatal consultation noted in patients that had attended 1 to 4 antenatal consultation with 38.2% . Only 15.4% of patients had attended 8 antenatal consultations.

Absence of fetal movement was the main consultation' reason with 21%. Some authors like Diallo and et al. [13], Amrouche [10], reported that the absence of fetal movements motivated the consultation respectively in 28% 47.14%. The disparity in the consultation' reason may be linked on the one hand to knowledge of the danger signs of pregnancy and on the other hand to the end of the pregnancy.

Malaria was the main cause of IUFD with 31%. This result is lower Diallo et al., finding [13], who reported that malaria is implicated in IUFD in 41.42%. However, it is higher than the 6.9% reported by Tajileki et al [11]. Our result can be explained by the endemic nature of malaria in Chad and the low practice of pre antenatal surveillance in this study.

Hypertensive pathologies (eclampsia + pre-eclampsia), accounted for 17.3% of the etiologies. Tchaou et al. [6], in their series found a rate of 11.4% of hypertensive pathologies as a cause of MFIU.

The induction of labor depends on the cervix' condition and the surgical history (caesarean section and myomectomy). The consistency of the cervix depends on the term of the pregnancy due to hormonal variation. The cervix condition is assessed by the Bishop score, which takes into account the characteristics of the cervix and the descent of the fetal. Thus there is a disparity in the score taking into account the morphology and the antecedents. A score > 7 allows induction with oxytocin whereas a score ≤ 6 requires the use of prostaglandins. In this series 67.3% of patients had a Bishop score ≤ 6. This rate is comparable to Amrouche' finding [10] who reported 65% of patients with Bishop score ≤ 6 score. This is higher than that of Mohamed [9] who reports 46.84%.

The labor was induced in the majority of cases in this study with 84.5%. This rate is close to Amrouche' rate [10], who noted 88%. Therefore it is higher than Mohamed' finding who reported 46.84% induced labor [9].

Induction can be done mechanically or pharmacologically [16]. Pharmacological means are increasingly used depending on the proof of the effectiveness. These include oxytocin, prostaglandins and laminaria. Labor was induced by the misoprostol in 63.6% of cases. Throughout the literature, we found that Diallo and et al. [13], in their series noted a misoprostol' use rate of 54.2% for labor 'induction. The high patients with score of bishop ≤ 6 in this study can explain this high rate of misoprostol using.

When IUFD is diagnosed, the ideal is to proceed to delivery by vagina. Most of the patients (94.5%) in this study had delivered

by vagina. This rate is like those of Baguilane and et al. [15], in 2019 in Lome, (Togo), Diallo and et al. [13], who reported respectively 96.7% and 88.55% of vagina delivery.

More than half of the patients admitted for IUFD had no complications (64.5%). This result corroborates those of Baguilane and et al. [15], and Mohamed [9], who noted respectively 89.33% and 92.4% respectively of patients without complications. However, 35.5% of the patients had presented complications. The main complications were: anemia (11.8%), amniotic infection (9.1%), and clot disorder (2.7%). These complications depended on various factors such as: term of pregnancy (when IUFD was diagnosed), hemoglobin rate, premature rupture of membranes.

We recorded three cases of maternal deaths, giving a maternal lethality rate of 3.6%. Tchaou and et al. [6], report a lethality rate of 0.4%. This maternal lethality rate could be attributed to complications related to late admission of patients and the lack blood products noted during the management.

## CONCLUSION

Intra uterine fetal death is a frequent pathology in our regions. Main causes are malaria and hypertensive diseases. Main reason for consultation is the absence of fetal movement. The treatment is often based on induction of labor with misoprostol. Reported complications are: as anemia and infection, which are responsible for maternal lethality. The commonest way of delivery is vagina.

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I, Gabkika Bray Madoué, on behalf of my co-authors submit the following manuscript for publication consideration. I confirm that the manuscript has been prepared for and sent only to the Taiwanese Journal of Obstetrics & Gynecology for publication consideration and not submitted to any other journal or any other type of publication either by me or any of my co-authors.

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## REFERENCES

1. Delabaere, C huchon, V Lavoue, V Lejeune, E Iraola, S Nedellec, et al. Standardisation of pregnancy loss terminology: expert consensus of the Collège National des Gynécologues Obstétriciens Français (CNGOF). *J.gynécol-Obstet Biol Reprod.* 2014; 43: 756-763.
2. Blencowe H, Cousens S, Jassir FB, Say L, Chou D, Mathers C, et al. National regional and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis. *Lancet Glob Health.* 2016; 4: e98-e108.
3. Dabillon T. Activity report 2010. Child Disability Register and Perinatal Observatory (RHEOP). Grenoble, 2011.
4. Mac Dorman MF, Gregory EC. Fetal and perinatal mortality: United States, 2013. *Natl Vital Stat Rep.* 2015; 64: 16-24.
5. Ignace Bwana K, Albert Mwembo TA, John Ngoy L, Elie KN, Michel Kabamba N, Prosper Kalenga Mk. Maternal frequency and risk factors for fetal death in utero in Kamina, Democratic Republic of Congo. *Pan African Medical J.* 2016; 23: 114-118.
6. Tchaou BA, Hounkponou NFM, Salifou K, Zoumenou E, Chobli A. «Les urgences obstétricales à l'hôpital universitaire de Parakou au Bénin: Aspects cliniques, thérapeutiques et évolutifs.» (Obstetrical emergencies at the Parakou University Hospital in Benin: Clinical, therapeutic and evolutionary aspects). *Eur Sci J.* 2015; 11: 260-272.
7. Soumah AF Momo, Tseunwo T Claudine, Bah O Hawa, Tebeu pierre Marie, Sy Telly. Epidemiological Profile and Management Modalities of Pregnant Women with Fetal Death in Utero before Labour in a Level II Maternity Hospital in Guinea. *Health Sci Dis.* 2018; 19: 7-9.
8. Razafindrafara Larissa Malula. Maternal morbidity and mortality after delivery of a dead foetus in utero at the befelatanana maternity hospital. Antananarivo: University of Antananarivo; 2012.
9. Mohamed M Traore. Etude de la mort fœtale in utero à la maternité du CS Réf CII de Bamako [Thesis: Med]. Bamako: Université des sciences des Techniques et des Technologies de Bamako; 2014.
10. Amrouche Souhila ARN. La mort fœtale in utero. Bejaia: Université Abderrahmane Mira Bejaia; 2017.
11. TajiLeki S, Osundja L, Kyembwa Mulyumba M, Sangani M, Habiragi M, Matumo M, et al. Epidemio-Clinical Profile of Death in Utero in Bunia in the Democratic Republic of Congo. *Int J Recent Scientific Res.* 2018; 9 : 7789-7792.
12. Soulamani Z, Khadmaoui A, Oukarroun A. Etude de l'impact de la consanguinité sur la santé des descendants dans la population de Tiflet(Maroc). *Eur Scientific J.* 2016; 1857-1881.
13. Diallo MH, Baldé IS, Diallo O, Diallo BS, Baldé A, Barry H, et al. Mort fœtale in utero (MFIU): Socio-demographic aspect, care and prognosis Maternal care at the Maternity Ward of the regional hospital of MAMOU. EDUCI 2016. *Revue Internationales Sciences Médicales d'Abidjan.* 2016; 18: 230-234.
14. Andriamandimbison Z, Randriambololona DMA, Rasoanandrianina BS, Hery RA. Etiologies of fetal death in utero: About 225 cases at Befelatanana Hospital Madagascar. *Tropical Medicine and Health.* 2013; 23: 78-82.
15. Bagulane Douaguibe, A S Aboubakari, A Bassowa, D Ajavon, et al. Maternal Epidemiological and Prognostic Aspects at Sylvanus Olympio Teaching Hospital in Lomé. *Open J Obstetr Gynecol.* 2019; 9: 511-520.
16. Tesiguia J, Fouedjo H, Fouelifack Y, Mbu E, et al. Risk factors intrauterine fetal death: a case control study at the maternity of Yaoundé Central Hospital. *Int J Reprod contracept obstet gyneco.* 2019; 8: 2149-2151.

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