

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20202707>

Original Research Article

Chorioamnionitis at the Befelatanana university hospital centre of obstetric gynecology in Antananarivo Madagascar: epidemiology, taken care and forecast

Rakotonirina Martial^{1*}, Rainibarijaona L. N. A.¹, Rakotozanany Besaina¹,
Randriamahavonjy Romuald², Tsifiregna R. L.³, Housni Ibrahim¹, Hery Rakotovao A.¹

¹Department of Gynecology Obstetrics, Befelatanana University Hospital Centre of Obstetric Gynecology in Antananarivo, Madagascar

²Department of Gynecology Obstetrics, Soavinandriana Hospital Center, Antananarivo, Madagascar

³Department of Pediatrics, Tanambao University Hospital Centre in Diego, Madagascar

Received: 29 October 2018

Revised: 05 June 2020

Accepted: 12 June 2020

***Correspondence:**

Dr. Rakotonirina Martial,

E-mail: andriamarorakotonirina@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The chorioamnionitis corresponds to an infection of the ovular cavity. She puts game neonatal and maternal forecast. This study had as objectives to describe the epidemiological aspects, the taking care and the forecast of the chorioamnionitis to the gynecology teaching hospital and obstetrics Befelatanana, Madagascar.

Methods: It is about a descriptive, retrospective and transverse study, during a period of 6 months going from January, 2016 till July 2016. The pregnant women introducing a premature break of membranes (RPM) complicated with chorioamnionitis hospitalized in CHU-GOB during this period had been included.

Results: Authors found 35 cases of chorioamnionitis, that is 38.1% premature breaks of membranes. The medium age of the patients was 20±5, 16 years old (extreme from 17 to 36 years). Primiparous was found in 82.9%. The chorioamnionitis had happened in 68.5% cases after 37 weeks of amenorrhea. The delay between RPM and happened of chorioamnionitis was of 6 hours. The picture of chorioamnionitis was complete in 54.3%. Delivery was by low way in 33.3%. Authors had found 88.60% case of endometritis, 8.6% case of parietal suppuration post caesarian section but without any maternal decease. Neonatal complications were marked by a score of Apgar <7 - five minutes in 74.3%, neonatal infection in 25.7% and precocious neonatal decease in 11.4%.

Conclusions: The chorioamniotite concerned primiparous especially young urgent. The application of the protocol of taking care of the premature break of membranes is necessary for the reduction of the happening of the chorioamniotitis.

Keywords: Choriomniotitis, Forecast, Maternofetal infection, Premature break of membranes

INTRODUCTION

The chorioamnionitis defined as an infection contamination of the ovular bag.¹ She often follows a premature break of membranes by pollution by ascending way. It is the most frequent pathology of the pregnancy,

noticed in more half of very premature births (chorioamnionitis private hospitals and subclinical merged).² In the developed countries, she is responsible for 12% perinatal mortality and of 9% precocious neonatal mortality. She can lead to a maternal hyperthermia in per-partum, to an endometritis of the

postpartum and draw a bet away in job premature.³ In countries to weak-willed person with income, chorioamnionitis represents 18.2% of infections of per-partum.⁴

In Madagascar, the premature break of membranes constitutes 10% of admission of pathological pregnancy in study hospital to the teaching hospital GOB. The chorioamnionitis is not a rare complication, she is responsible for maternal and per natal morbidity in many worldwide studies but not enough data which approach this topic in Madagascar where from this study and that.

The forecast of the chorioamnionitis to the gynecology teaching hospital and obstetrics Befelatanana had as objectives to describe the epidemiological aspects, the taking care and the forecast of the chorioamnionitis to the gynecology teaching hospital and obstetrics Befelatanana, Madagascar.

METHODS

Authors led a transverse and preliminary descriptive retrospective study within the gynecology teaching hospital - obstetrics of Befelatanana, Madagascar. This hospital complex is a level III reference hospital located in the city centre of the capital, Antananarivo, Madagascar and which includes 6 services (service of obstetrical pathology, service of gynecological pathology, intensive care anesthesia - service - surgical unit, service imagery and biology, service of health of reproduction, a service of reception of the victims of sexual acts of violence, an administrative service). The delivery number in the study hospital was 8000 deliveries/year. Study took place over a period of 6 months going from January 1st, 2016 till July 31st, 2016. The population of study is constituted by the patients introducing a chorioamnionitis continuation in a break premature of membranes with a term the upper or equal to 28 week of amenorrhea (HER) taken care in the gynecology teaching hospital - obstetrics of Befelatanana during the period of study which answered this study criteria of inclusion. The diagnosis of the chorioamnionitis is established on diagnostic criteria of the national Secondary school of the gynecologists and obstetricians French (CNGOF) on 2009: a maternal fever (>38°C) associate at least 2 signs as uterine sensitivity, contractile uterus, abnormal smell of the liquid amniotic the leukocytosis, fetal tachycardia (>160 bpm), (>15000 GB/mm³) and maternal tachycardia (>100-120/min).⁵

All the others of reasons of fever during the pregnancy, a chorioamnionitis with undamaged membranes and the incomplete files were excluded from this study.

Following variables were studied

Maternal variables

Age (years), profession, conjugal situation, level d' education, gestate, parity, gestational age at the time of

the diagnostic of the chorioamniotite (week amenorrhea = HER), numbers clinical parameters of prenatal consultation in admission (weight, size, blood pressure, temperature, uterine fetal height and heart noise), biological parameters (NFS, CRP), time of clinical latency (delay between the premature beginning of membrane break and the happening of chorioamnionitis), maternal complications and hospitalization length

For the newborn baby

Born weight (g), indication of Apgar in the 5th minute, way of delivery and color of the liquid amniotic in birth.

Statistical analysis

Data were collected from the register of hospitalization of service and from the medical records of the patients and have analyzed summers has the assistant of software Ear - information version 3.2.2.

RESULTS

During the period of study, over 1927 admission in pregnancy service at risk we had recorded 35 cases of chorioamnionitis a prevalence of 1.81% of pathological pregnancy is. The medium age of the patients was 20±5, 16 years old with extremes going from 17 to 36 years. The age group between 19 and 24 years represented 54.28% patients. Primiparous was the most affected (82.90% patients). The gestational age of our patients was prematurely seen in almost 52% cases. The medium delay between break premature of membranes and the happening of the chorioamnionitis is of 6 hours with a minimum of 2 hours and a maximum of 74 hours. The picture of the chorioamnionitis was complete in 54.30% cases. The delay of latency less than 12 hours was the most represented proportion (40%) (Table 1).

Table 1: General characteristics of chorioamnionitis.

Parameters	Division	Number (n=35)	Rate (%)
Age (year)	<19	5	14.2%
	19-24	19	54.2%
	24-29	7	20%
	29-34	2	5.7%
Profession	≥34	2	5.7%
	Housewife	13	37.1%
	Primary sector	11	31.4%
	Secondary sector	9	25.7%
Conjugal situation	Tertiary sector	2	5.7%
	Married	32	91.4%
Education level	Single	3	8.5%
	Illiterate	1	2.8%
	Primary	14	40.0%
	Secondary	13	37.1%
	University	7	20%

Parameters	Division	Number (n=35)	Rate (%)
Parity	Primiparous	29	82.9%
	Multiparous	4	11.4%
	Great multiparous	2	5.7%
Gestational age	28-34	3	8.5%
	34-37	8	22.8%
	≥37	24	68.5%
Time of clinical latency (hour)	< 12	14	40%
	12-24	13	37.1%
	24-48	7	20%
	≥48	1	2.9%
Chorioamnionitis tables	Fever + 2 signs	4	11.4%
	Fever + 3 signs	12	34.3%
	≥4 signs	19	54.3%
Born weight (g)	<1500	1	2.8%
	1500-2500	8	22.8%
	≥2500	26	74.2%
White cell (GB/mm ³)	>15000	29	82.8%
	<15000)	7	20%
CRP (mg/L)	<50	6	17.1%
	50-100	15	42.8%
	≥100	14	40%

Table 2: Forecast and Maternofetal complications.

Parameters	Division	Number (n=35)	Rate (%)
Way of delivery	Caesarean	23	56.7%
	Low way	12	33.3%
Medical treatment	Antibiotic therapy	35	100%
	Tocolysis	3	8.5%
	Antipyretic	18	51.4%
Maternal complication	Endometritis	31	88.5%
	*ISO	4	11.4%
	Maternal death	0	0%
Neonatal complication	Apgar < 7	26	74.3%
	Neonatal infection	9	25.7%
	Neonatal death	4	11.4%

*Infection of the operative site.

Among 35 women included in this study, 23 women gave birth by caesarean section. The neonatal asphyxia was fetal complication the most frequent followed by precocious neonatal infection and by the decease. As regards maternal forecast, the endometritis was the most frequent maternal complication is 88.60% cases coherent of an infection of the surgical site and no decease nursery school (Table 2) was objectified.

DISCUSSION

In this study, the frequency of chorioamnionitis found in this series is more important (38.01% RPM). In Morocco in 2017, he brought back Units States 8.3% urgent RPM.⁶ Aux from 1988 till 2005, Laibl and his collaborators found 10%.⁷ Authors found a prevalence then raised in

comparison with African series and in the developed countries. It could explain of one due to the fact that CHUGOB is a hospital complex public. It's a reference centre, receiving cases obstetrical is complicated in Antananarivo city and all its peripheries. Also risk factors of chorioamnionitis are more important because it is a country under press with a social and economic low level. Finally, criteria used to put down diagnosis differ.

The mean of age of our patients was 20±5, 16 years old. In Africa a study led to Morocco by Asmama Y and its collaborators found a medium age of 28 ans.⁶ In France, the medium age found. The population was 33 ans.⁸ Am therefore young that in Africa and that in the Western countries and meets.

Primiparous was the most concerned by the chorioamnionitis with predominance almost 83% in this study. In Africa Asmama Y and his collaborators found that multiparous predominates (51.4%).⁶ In France, Ronzino also brought back a predominance to multiparous (81%).⁸ This difference was owed that the Malagasy primiparous is not concerned about their pregnancies.

Concerning length latency that is length between RPM and happening of the chorioamnionitis. In this series, the medium time of latency was of 6 hours. This joins of that found in Africa (6 hours) 9 and in France (7 hours).⁸

The gestational age of our patients was prematurely seen in almost 52% cases. In literature, the frequency of amniotic infections diagnosed after amniocentesis is very high in RPM prematurely: from 15% to 57% (35% on average).^{10,11}

For the elements of diagnostic private hospitals, the picture of chorioamnionitis was complete in 54.30%. In France, Paumier A brought back a complete picture in 36.6% of cas.¹²

In this series of study, caesarian section was found dan 56.7% against delivery by low way (33.3%). The delivery way by caesarian section is comparable to that noticed in Africa by Ramsey PS (72.2%) and in France by Ronzino-Dubost (54%).^{6,8} Caesarian sections had been therefore the way of delivery most solicited in very studies this fact to explain that objective it is fetal extraction immediately for rescue fetal but ca job depends on the degree of progress.

Concerning maternal forecast, the endometritis was the most frequent maternal complication is 88.60% cases coherent of an infection of the surgical site (8.60%) and no decease nursery school in 6 months was objectified. This corobore with the results of Saizonou J et al in Benin where the endometritis (27.3%) was the most accused type of infection. In study multicenter dirty, the upper rate of impact of endometritis of 50% was found and she was 3-4 times as frequent after caesarian section

as after delivery by way basse.¹³⁻¹⁴ In the world, the maternal morbidity by an endometritis, the bacteremia, the sepsis and the infection of the surgical site is important. Maternal mortality is raised in Western Africa 15 and a weak impact in the European countries: 2-5 cases/year.¹⁶ The results of our series seem therefore encouraging. Letting think that the taking care immediately from chorioamnionitis spares the mothers of strict complication found in literature.

For fetal forecast, the neonatal asphyxia was the most frequent fetal complication (74.30%) monitoring of the precocious neonatal infection (25.70%) and of the decease (11.40%). In the Africans series, they found: neonatal decease (3.6%), asphyxia neonatal (11.5%) and European: neonatal decease (9%), asphyxia neonatal (8%) and the neonatal infection (36%).^{8,17} In Africa and in Europe, he had brought back a neonatal death rate and asphyxia widely inferior to that found in this study. This difference could explain by the difference of a technical set.

CONCLUSION

The choriomnionitis is a source of strict neonatal and maternal morbidity. She concerned primiparous especially young urgent. The borders of our study are a retrospective and descriptive study with a weak sampling. Prevention is primordial as the application of the protocol of taking care of the premature break of membranes, the screening of the cervical and vaginal infections, the application of the protocols of antibiotic prophylaxis and of the antibiotic therapy in the course of the pregnancy.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Redline RW. Inflammatory response in acute chorioamnionitis. *Sem Fetal Neonat Med.* 2012;17:20-5.
2. Redline RW. Placental inflammation. *Sem Neonat* 2004;9:265-74.
3. Gravett MG, Novy MJ, Rosenfeld RG, Reddy AP, Jacob T, Turner M, et al. Diagnosis of intra-amniotic infection by proteomic profiling and identification of novel biomarkers. *JAMA.* 2004;292:462-9.
4. Saizonou J, Ouédraogo L, Paraiso MN, Ayélo P, Kpozèhouen A, Daraté R, et al. Epidemiology and management of intrapartum infections in the maternity ward of Ouémé-Plateau county hospital in Benin. *The Pan African Med J.* 2014;17:89.
5. Beucher G, Charlier C, Cazanave C. Diagnosis and management of intra-uterine infection: CNGOF preterm premature rupture of membranes guidelines. *Gynecol Obstet Fertil Senol.* 2018;46(12):1054-67.
6. Yasmina A, Barakat A. Prelabour rupture of membranes (PROM) at term: prognostic factors and neonatal consequences. *The Pan African Med J.* 2017;26:68.
7. Laibl V, Sheffield J, Roberts S. Recurrence of clinical chorioamnionitis in subsequent pregnancies. *Obstet Gynecol.* 2006;108:1493-67.
8. Ronzino-Dubost V, Sananès N, Lavaux T, Youssef C, Gaudineau A, Lecointre L, et al. Evaluation of the interest of procalcitonin in the diagnosis of chorioamnionitis in preterm premature rupture of membranes. An observational and prospective study. *J Gynecol Obstet Bio Reprod.* 2016;45(7):745-53.
9. Horo A, Toure-Ecra F, Mohamed F, Koné M. Malfunction and mortality kindergarten. Analysis of 35 cases at the maternity hospital of Yopougon University Hospital (Abidjan Côte d'Ivoire). *Med Afr Noire.* 2008;55(8):44-53.
10. Berardi JC, Colaou JC, Engelmann P, Botto JN, Vice P, Robichez B. Study of the bacterial colonization of the amniotic fluid collected by amniocentesis in the event of premature rupture of the membranes. *J Gynecol Obstet Biol Reprod.* 1995;24:69-73.
11. Gomez R, Romero R, Edwin SS, David C. Pathogenesis of preterm labor and preterm premature rupture of membranes associated with intraamniotic infection. *Infect Dis Clin North Am.* 1997;11(1):135-76.
12. Allen SR. Epidemiology of premature rupture of the fetal membranes. *Clin Obst Gynecol.* 191;34:685-93.
13. French JJ, Mc Gregor JA. The pathobiology of premature rupture of membranes. *Curr Opin Obstet Gynecol.* 1995;7:140-5.
14. Paumier A. Rupture premature des membranes avant 32 semaines amenorrhée: facteurs prostitute prenatal. *Gynecol Osterie Fertil.* 2008;36:748-56.
15. Grether JK. Maternal infection and cerebral palsy in infants of normal birth weight. *JAMA.* 1997;278:207-11.
16. Lamy CS, Zuily E, Perdriolle E, Gauchotte S, Villeroy-de-Galhau MO, Delaporte D, et al. Management of post-partum infections. *J Gyne Obstet Bio Reprod.* 2012;41:886-903.
17. Jacques S, Laurent Ô, Moussiliou NP, Paul A, Alphonse K, René D, et al. Epidemiology and management of per-partum infections at the maternity ward of the Ouémé Plateau Hospital in Benin. *Pan Afr Med J.* 2014;17:82.

Cite this article as: Martial R, Rainibarijaona LNA, Besaina R, Romuald R, Tsifiregna RL, Ibrahim H, et al. Chorioamnionitis at the Befelatanana university hospital centre of obstetric gynecology in Antananarivo Madagascar: epidemiology, taken care and forecast. *Int J Reprod Contracept Obstet Gynecol* 2020;9:2778-81.