

Prevalence of Antiphospholipids Antibodies in Pregnant Women seen in Prenatal Consultation in a Public Maternity of Niamey, Niger

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Abstract—The antiphospholipids antibodies lupus like are oriented against the membranous phospholipids and can be associated to serious complications of pregnancy. The objective of this survey was to determine the prevalence of this type of antibody in pregnant women that come for prenatal consultation to Issaka Gazobi maternity of Niamey. The selection of the sample was done on the basis of clinical information on pregnancy complication evoking the syndrome of antiphospholipids antibodies. In presence of an antiphospholipid antibody, the activated partial thromboplastin time (APTT) of the patient is lengthened. APTT on the mixture of the plasma of the patient to equal part of the plasma of control also remains stretched out because of the inhibitory effect of the antibody. During the period of the survey 1960 pregnant women have been consulted among which 35 have been suspected of the antibodies antiphospholipids syndrome, whether a rate of 1,83%. The main motives of consultations were the threats of miscarriages (40, 35%) and pre-eclampsy (26,42%). The antiphospholipids antibodies of lupus type has been detected in 37,14% of cases and in 25,71% it has been underlined. The aspirin alone-based treatment has lead 88,90% of pregnancies at term. These results showed up a high prevalence of anticoagulants circulating lupus in the pregnant in Niamey. The use of aspirin 100 mgs per day permitted to avoid obstetric complications.

Keywords— Antibody antiphospholipids, pregnancy, aspirin, Niamey.

I. INTRODUCTION

The circulating anticoagulant lupus like are antibodies that appear during certain immunological disorders and are responsible of serious obstetric complications during pregnancies such as the lateness of the intra uterin growth, the fœto-embryonic losses and the

kidney vascular syndromes [1], [2]. These complications define the syndrome of antibodies antiphospholipid. The biologic tests of investigation of such complication are the research of circulating antibodies antiphospholipid of lupus type, of anticardiolipine (aCL) and of antibodies anti β 2 glyco proteins I ($\alpha\beta$ 2GPI). The frequency of abortions bound to these antibodies is estimated to 10 to 20% before the 9th week of pregnancy. [3]

In Niger the frequency of pre-eclampsia and of the LIUG was estimated respectively to 3,6% and 26,5% in 2009 [4]. If in most cases the reasons of these complications were clearly identified, the ones due to the circulating anticoagulants of lupus type remain to be determined. The objective of this survey was to evaluate the prevalence of antibodies antiphospholipid lupus type in the pregnant seen in prenatal consultation at Issaka Gazobi Maternity of Niamey.

II. MATERIAL AND METHODS

Ethics

This survey received the approval of the national ethics committee and women agreed freely to take part after a well informed interview.

Setting of survey

The pregnant women have been chosen in the service of external consultation of the Issaka Gazobi maternity Niamey.

Reagents

Reagents (APTT and plasma control) come from the LABKITS laboratories; CHEMELEX, PLC Barcelona). Tests of hemostasis have been made with the help of an automate analyser of coagulation, Ts 2000 of Tianjin MD mark, Pacific technology Co. Time of partial thromboplastin activated (APTT)

measures the necessary time to the coagulation of a citrate plasma after addition of phospholipids (cephaline), of activator and ionized calcium. So to 100µl of plasma one adds 100µl of acidic ellagique. After 3 minutes of incubation of the mixture one triggers the plasma coagulation while adding 100µl of ionized calcium. The patient's time APTT is considered as elongated if it is superior to more than 10 seconds in relation to the APTT of plasma control. The underlining of the inhibitory effect was made after incubation of the mixture to 37°C during 2 hours to an equal plasma volume of the patient and plasma controls. The test is considered positive if the index of ROSNER is superior to 15 [5].

Type and period of survey

It is a descriptive prospective survey done between January and August 2013 at Issaka Gazobi Maternity Niamey.

Survey sample

The survey sample was constituted of pregnant women living in the urban community of Niamey.

Sampling

The sample was constituted in a random way as and when the patients were admitted in consultation. The selection was made on the basis of clinic information of pregnancy complications making question the APS. All parturients having presented obstetric complications bound to a hormonal insufficiency, a malformation, a foeto - maternal incompatibility or chromosomal anomalies have been excluded of the survey.

Blood swabs

After eliminating the first drops the total blood is drawn straightforward by veinous puncture in a citrate tube (3,2% of citrate trisodique) while respecting the proportions of an anticoagulant volume for 9 volumes of blood. Fresh plasma thrombocyte poor was obtained after a double centrifugation at 2500 rotations per minute at + 4°C during 10 minutes. Tests of coagulation were made in the 2 hours that followed swabs. The circulating anticoagulant was detected using the activated partial thromboplastin time (APTT). The detection and the evidence were made according to the recommendations of "the international Society of Thrombosis and Hemostasis" (ISTH) [6].

Variable of survey

The parameters studied are age, the level of instruction, the income, the gestité, the parity, the origin, the motive of consultation, the APTT and the anti thrombocyte agrégant treatment received.

collection of data

The collection of data was done through an investigation card

Data analysis

Data were computerized on Excel then transferred on SPSS (Statistical package for social science) version1.9 to be analyzed. The test of khi two was used for the comparison of proportions and the threshold of meaningfulness is fixed to P< 0, 05.

III. RESULTS

We counted on the basis of clinic information, 35 pregnant women were suspected bearers of a syndrome of antibodies anti phospholipids on a total of 1920 prenatal consultations either a rate of 1,83%. The average age of women suspected of SaPL was 28,08 ± 4,24 years. The average pregnancy was 5 with extremes ranging from 1 to 10, a great part among them was non schooled (48,57%) and only 25,7% exercised an activity generating incomes enabling an adequate taking in charge with more successive consultations. The system of reference allowed to note that 17,1% of the patients were referred by integrated health centers (IHC) and peripheral centers of maternal and infantile protection (CMIP) of Niamey and of Tillabéry region toward Issaka Gazobi maternity. The table n°1 shows the consultation motives. In total 52 motives of consultation were notified to the 35 women suspected of SaPL. The main motives found were the repeated miscarriages (40,38%), the stern pre - eclampsies (PES) (26,92%) and in utéro foetal death (MFIU) (23,18%).

Tableau I: consultation motives allotment in the suspected patients

Clinic diagnosis	Number	Percentage
Miscarriages	21	40,38
Stern pre-eclampsy	14	26,92
In utero Dead foetal	12	23,18
Retro placental bruise	2	3,84
Intra-Uterine Growth Delay	2	3,84
False positive VDRL	1	1,92
Total	52	100

Sixteen (16) patients had caesarean surgical antecedents whether 45,71% .The often evoked motives for these Caesareans were the stern pre-eclampsy (75%) and the retro placental bruises (RPB) (12,5%). The imputable pathologies to the syndrome of antibodies anti phospholipids represented 67, 30% of the motives of consultation.

The hemostasis tests done showed that the initial APTT was lengthened in 13 patients (37,14%). The inhibitory effect after the correction with normal plasma (V/V) was recovered with 9 patients (25,71%) suspected to have the circulating antibodies of lupus like in the plasma (Table II)

Table II: Distribution of the patient suspected of SaPL according to the APTT

	APTT			
	Before correction		After correction	
	Numb er	percenta ge	Numb er	percenta ge
Lengthened APTT	13	37,14	9	25,71
Normal APTT	22	62,86	26	74,2
Total	35	100	35	100

The repeat of obstetrical manifestation in detected women shows that (table n°3) miscarriages were present in 50% of the patients while the notion of SPE and In utéro Dead foetal was found again with a frequency of 30% each. During this survey, 29 patients of the 35 suspected were regularly observed and in three (3) among them the obstetrical complications continued in spite of the taking in charge.

Table III: Obstetric antecedent allotment in the patients with anti-Phospholipid syndrom

Obstetrical antecedents	Number	Percentage
Miscarriages	5	50
SPE	3	30
IUDF	3	30
IUGD	1	10

The 9 patients (25,71%) having the APS, received a preventive aspirin based treatment 100 mg/daily. The pregnancy was led to its term with 8 among them. One therapeutic failure under aspirin 100 mg/daily was recorded with one of the patients.

IV. DISCUSSION

We recorded 35 cases of pregnancy at risk suspected of APS on a sample of 1920 pregnant women seen in Prenatal Consultation (PNC) during the period of survey. The frequency of the anti-phospholipid syndrom (APS) suspicion was 1,83% with 67, 30% of pathologies from the (APS) as consultation motive. The average age of these delivering women was 28,08% ± 4,24. Although one of features of the Nigerien population is its youth, the results that we found are comparable to those of Amel and al [7] and Cambon-Eszto [8] who respectively found in Iraq and in France 29,0 5± 8,13 years and 30 ±S 3,6 years. These results are also comparable to those of Heilmann and al [9]. The majority of the women admitted in consultation came for their prenatal consultation on their own initiative because of sufferings endured during the previous pregnancies. The reference rate from the Maternal and Infantile protective centers (MIP) and the Integrated Health centers (IHC) is 17,1%. Such A result can only be explained by the ignorance of this illness by certain professional of health. So if somewhere else the research on antibodies anti-

phospholipids in case of pregnancy complication is systematic and better codified, here in our context the ignorance of this obstetrical pathology and the limited diagnostic means explain the feeble rate of reference toward the adapted structures where the patient could be better observed.

Women of multi-pregnancy (4-6 pregnancies) and more (≥7 pregnancies) represent 51,43% and 31,42% of cases respectively. According to the demographic investigation and health of 2012 of the National Statistical institute (NSI) [10], the fertility rate in Niger remains of the highest in the world with 7,4 children/ woman. This high fecundity could be explained by the desire of motherhood despite of the embryo-foetal repeated loss. The IUDF and the SPE constitute the main motives of consultation in our set with 31,43% each. In a survey of Cambon-Eszto[8] on the kinetics of antibodies anti-cardiolipines (aCL) in the pregnant women it is miscarriages that are first with 59,8% followed by the SPE with 13% of cases. Not any notion of auto-immune illnesses or family thrombosis has not been reported in these patients. However one cannot separate this possibility because the weak schooling level of those made them unaware of these pathologies. A Caesarean was indicated for SPE in 45,71% of our patient. Indeed if a precocious tracking of the APS followed by an adequate taking in charge was well conducted during the pregnancy, the rate of Caesareans would probably decrease. The ignorance of the taking in charge the APS of the pregnant woman seems to be one of probable causes this high rate of Caesarean.

The elongation of the APTT was found with 13 patients (37,14%). The inhibitory effect was found in 69,26% of the patient having initially a stretched out APTT. According to Bentolila and al [11] the impact of anti-phospholipids antibodies of patients with recurrent foetal losses are varied. The circulating anticoagulant prevalence in this category of patient varies from 8 to 68% [12] and [13]. This disparity could be explained by the choosing system of the patients. Most of the survey focused solely on miscarriages whereas in our set it was about all the obstetrical complications potentially from the anti-phospholipid syndrom (APS).

Coupling clinical information and the stake in evidence of the circulating anticoagulant, 25,71% of our patient tally the definition of the APS and 50% among them had miscarriages. This result is close to the one of Jalloulia and al [14] in Tunisia with 28, 5% but far from the one of Magy [15] with 9,09%.

Treatment based on aspirin 100 mg/daily, allowed a favorable evolution in time (88,90%) of pregnancies at risk and lead to a normal childbirth. Many surveys as those of Noble and al [16s], Vashisht and al [17] and Xiao and al [18] showed that the adequate and precocious use of thrombocyte antiagrégants and/or of the héparine allows leading pregnancy to term in the patients suffering from this disease. The rate pregnancy at term gotten in our set with the aspirin

only is highly superior to the one gotten by Rai and al [19] during their experiment of associating aspirin and cutaneous heparin.

V. CONCLUSION

On the basis of coagulation tests based on phospholipids and the false syphilitic serology we determined the prevalence of antibodies anti phospholipids of lupus type in pregnant in prenatal consultation at Issaka Gazobi maternity presenting obstetrical antecedents evoking the APS. A treatment based on aspirin 100 mg daily permitted to avoid the unexpected arrival of obstetrical complications in the majority of the patients. Research of the anti - β 2GP1, aCLs and aPLs could modify this prevalence.

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