

RESEARCH ARTICLE

Screening of sexually transmitted infections on pregnant women in Mahajanga

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ABSTRACT

In Madagascar, HIV infections and syphilis are monitored in pregnant women. However, hepatitis B research is not included in this program. The objectives of this study were to identify the carriage of HIV or HBV, and to determine the prevalence of syphilis and possible co-infection. This is a prospective, descriptive study conducted at the CSI in Mahajanga from February to April 2016. A total of 95 pregnant women accepted to participate in the study. The average age was 28 years old. The majority had two or more sexual partner (72%). No HIV infection was found. The prevalence of syphilis and hepatitis B were 7.4% and 5.3%, respectively. It is recommended that pregnant women be vaccinated against HBV and that the Ministry of public health provides free hepatitis B care.

INTRODUCTION

In developing countries, pregnant women encounter difficulties in view of STIs. Very often, such infections are transmitted to them by their unfaithful husband through extra-marital affairs. Either HIV infection, or those from the Hepatitis B virus and syphilis constitute a main public health issue around the World. These infections are transmitted primarily by sex, parenterally, or to the foetus from pregnancy, suggesting the risk of coinfection on the same patient. The rate of infection keeps rising, despite of measures taken in each country to fight it. Each year, the World Health Organisation estimates at more than 340 millions of new cases of sexually transmitted infections [1]. The objectives of this study were to understand the sociodemographic behaviours of pregnant women, to identify the level of infection with Hepatitis B virus and eventually that of HIV, and to determine the prevalence rate of syphilis.

MATERIALS AND METHODS

The study was conducted a descriptive study on women, at the integrated Health Centre of Mahajanga in Madagascar in collaboration with the laboratory of the University Hospital Centre of Zafisaona Gabriel (UHC ZAGA) from February to April 2016. Blood samples were taken during prenatal consultation (PNC) of pregnant women. It includes also subjects who accepted to undergo PNC every monday all along the study. A rapid assay of immunochromatography was used to detect both HIV and syphilis infection « OnSite HIV/Syphilis Ab Combo Rapid tests » (Batch: F0115M11C01, Expiry Date 14/07/2017) and for the Hepatitis B, Kit «OnSite Hbs Combo Rapid Tests» (Batch : F0115M11C01, Expiry date 14/07/2017).

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HISTORY

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RESULTS AND DISCUSSION

Infections on pregnancy

None of the 95 pregnant women screened for HIV, were tested positive (TableII). Some authors reported a HIV infection rate of 0,8% among pregnant women [2]. The time monitoring of HIV prevalence on pregnant women is certainly an interesting way to follow up the spread of virus among population, particularly when the rates of heterosexual contamination seem recently to rise with newly detected seropositive cases [2].

The prevalence rate of Hepatitis B was of 5,3% (TableII). This figure is higher than that found in Antananarivo by Randriamahazo and al. in 2012 [3]. In Cameroun, Hepatitis B which attains many pregnant women has a prevalence rate of 10,2% [4].

In Madagascar, systematic screening of Hepatitis B on pregnant women is not mandatory during the prenatal consultation and tests are not available at the Basic Health Centre. Conversely, in developed countries, such screening is recommended from the six months of pregnancy. It enables to determine the serological status of women and to allow a better handling at the occurrence of the infection.

No significant relationship was found between age and Hepatitis B infection. Andréas and al. as well did not relate the age factor to the main risk of contracting Hepatitis B during pregnancy [5]. In opposite, Entisar and al. in Cameroun realized in 2011 that age was mainly linked to Hepatitis B occurrence among pregnant women [6].

As for the syphilis infection, the seroprevalence was of 7,4%. This figure is close to that reported by Newman and al. in 2012 in Ouganda, they found 6,49% on pregnant women [7]. However, it is by far superior to that of Ormaeche in Perou in 2008 (1,6%) [8]. Other study led

Table I : Sociodemographic characteristics.

Effective	Variables (n = 95)	Percentage (%)
Age		
▪ <18 years old	07	7.36%
▪ [18 - 28]	62	65.26%
▪ [28 - 38]	23	24.21%
▪ = 38 years old	03	3.58%
Profession		
▪ Housewife	48	50.50%
▪ Merchant	44	46.30%
▪ Teacher	1	1.10%
▪ Student	2	2.10%
Level of study		
▪ Illiterate	11	11.51%
▪ Primary	46	48.42%
▪ Secondary	34	35.78%
▪ Academic	04	4.21%
Age of pregnancy		
▪ 10-25 SA	53	55.78%
▪ = 26 SA	42	44.21%
Number of pregnancy		
▪ 1	36	37.89%
▪ 2	30	31.57%
▪ = 3	29	30.52%
Parity		
▪ 0	40	42.10%
▪ 1	27	28.42%
▪ 2	13	13.68%
▪ = 3	15	15.78%
Abortion		
▪ 0	80	84.21%
▪ 1	12	12.63%
▪ = 2	03	3.15%
Sexual partner		
▪ 1	27	28%
▪ = 2	68	72%

Table II : Biological characteristics.

Sérologie	Number	Percentage (%)
Hépatite B	05	5.3%
Syphilis	05	7.4%
VIH	00	0%
Coïnfection	00	0%

by Katenga in 2012 in Congo on the same population showed a higher result with 10,9% [9]. Syphilis is one of the least known pathologies among the population of Madagascar, despite of its screening on pregnancy.

Coinfection

In this study, no HIV-Hepatitis B coinfection was found on tested subjects. Conversely, in South Africa, Anderson and al. reported in 2012, 3,4% cases of HIV and Hepatitis B coinfection on pregnant women [10]. Similarly, Noubiap and al. investigated that 1,5% of women were infected with both HIV and Hepatitis B [4]. Such outcomes imply that coinfection is confirmed among pregnant women but at a low level of prevalence.

CONCLUSION

This work enabled to estimate the level of HIV, Hepatitis B virus and the syphilis infections on pregnant women. None of the subjects under study were tested positive with HIV. In opposite, hepatitis B and syphilis occurrence were confirmed. Coinfection was not evidenced. The antenatal screening helps to lower and to prevent the vertical or horizontal spread of HIV, and syphilis. These assays are available and free at the Basic Health Centre. Which is not the case of the Hepatitis B test. Immunization is recommended and this despite of low prevalence rate of the Hepatitis B infection, systematic screening is of such importance.

REFERENCES

- [1]. Dovonou CA, Amidou SA, Kpangon AA, Traoré YA, Godjedo MP et al. Prevalence of hepatitis B in people infected with HIV in Parakou Benin. *Pan Afr Med J.*2015; 20:125.
- [2]. Berlioz-Arthaud A, Baumann F. Séroprévalence du VIH chez les femmes enceintes en Nouvelle-Calédonie: bilan d'une année de surveillance. *Bull Soc Pathol Exot.* 2002;95(2):109-114
- [3]. Randriamahazo TR, Raherinaivo AA, Rakotoarivelo JH, Contamin B, Rakoto OA, Rasamindrakotroka. Prevalence of hepatitis B virus serologic markers in pregnant patients in Antananarivo, Madagascar. *Med mal.* 2014;45(1-2):17-20
- [4]. Noubiap JJ, Nansseu JR, Ndoula ST, Bigna R, Ahmadou M, Jingi et al. Prevalence, infectivity and correlates of hepatitis B virus infection among pregnant women in a rural district of the Far North Region of Cameroon. *BMC Public Health.* 2015; 15:454.
- [5]. Andreas A, Frambo B, Atashili J, Nde Fon P, Ndumbe PM. Prevalence of HBsAg and knowledge about hepatitis B in pregnancy in the Buea Health District, Cameroon: a cross-sectional study. *BMC Res Notes.* 2014; 7: 394.
- [6]. Ventisar A M, Suad AM, Babiker M, Gasim I, Duria A R, Adam I. Epidemiology of hepatitis B and hepatitis C virus infections in pregnant women in Sana'a Yemen. *BMC Pregnancy Childbirth.* 2013; 13:127.
- [7]. Newman L, Kamb M, Hawkes S, Gomez G, Say L, Seuc A et al. Global Estimates of Syphilis in Pregnancy and Associated Adverse Outcomes: Analysis of Multinational Antenatal Surveillance Data. *PLoS Med.*2013; 10(2): e1001396.
- [8]. Ormaeche M, Whittembury A, Pun M, Suárez-Ognio L. Hepatitis B virus, syphilis, and HIV seroprevalence in pregnant women and their male partners from six indigenous populations of the Peruvian Amazon Basin, 2007-2008. *Int J Infect Dis.* 2012; 16: e724.
- [9]. Katenga B, Gedeon, Maindo A, Mike A. Syphilis au cours de la grossesse dans la ville de Kisangani : Prévalence, Facteurs de risque et pronostic de la grossesse. *KisMéd.* 2014; 5(1):22-30.
- [10]. Andersson M, Maponga T, Ijaz S, Barnes J, Theron G, Meredith S et al. The epidemiology of hepatitis B virus infection in HIV-infected and HIV-uninfected pregnant women in the Western Cape. *Vaccine.* 2013; 31:5579-84.