

Prevalence of HBs Antigen in Pregnant Women in Regional Hospital Center Hassan II in Agadir-Morocco

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Abstract: Introduction: The chronic viral hepatitis B is a public health problem and remains a global challenge with 350 million carriers of HBs antigen (HBsAg). The prevalence of HBsAg varies from one country or continent to another. There is no data on the prevalence of hepatitis B in the general population in Morocco. Our aim is to estimate the prevalence of HBsAg among women who have recently given birth in 2019 at the maternity of regional hospital center (RHC) Hassan II of Agadir-Morocco.

Patients and methods: This is a single center observational prospective study on the prevalence of HBsAg in pregnant women at the Hassan II hospital in Agadir, conducted over a period of 03 months (February-March and April 2019).

Results: Four hundred and eighty three pregnant women were included. The prevalence of HBsAg was 1.2%. The average age was 29.9 years [18-47 years]. Not all women tested were aware of their serologic status with hepatitis B virus (HBV) and none were vaccinated before pregnancy. The study of risk factors did not reveal an association with HBsAg status.

Conclusion: This study is the first to estimate the prevalence of Ag HBs at the maternity of RHC Hassan II of Agadir-Morocco. During pregnancy, the infection with the HBV is determined by the risk of mother-to-child transmission, which can be avoided by serovaccination of the newborn. The search for HBsAg should be done in all pregnant women.

Keywords: HBs Antigen; Prevalence; Pregnancy The authors disclose no conflict of interest.

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I. Introduction

Infection with the hepatitis B virus (HBV) remains a public health problem nationally and globally. Indeed, the World Health Organization estimates that more than 350 million people are chronic carriers of HBs antigen (HBsAg) [1, 2, 3, 5, 6]. In Morocco, few epidemiological studies are available but it is estimated that the prevalence of HBsAg in the general population is 1.5% [4]. In developing countries, most HBV infections occur during the perinatal period (vertical transmission) with a risk of progression to chronic liver disease in more than 90% of cases [1]. Very little data is available in our country about the prevalence of hepatitis B in pregnant women [40, 41]. Therefore, it is relevant to know the prevalence of HBV in pregnant women in the city of Agadir and regions. The aim of our study is first to evaluate the prevalence of HBsAg in pregnant women followed at Hassan II Regional Hospital Center (RHC) in Agadir and secondly to research the epidemiological profile of pregnant women infected with HBV and to identify the risk factors for HBV infection in pregnant women with HBsAg positive.

II. Patients And Méthods

This is a prospective, observational single center study on the prevalence of HBsAg in pregnant women in RHC Hassan II of Agadir, conducted over a period of three months (February- March -April 2019), and conducted within the hepato-gastroenterology service, maternity center and obstetrics and immuno-serology laboratory of the RHC Hassan II of Agadir.

a-Inclusion Criteria

- Pregnancy scalable for at least 4 months.
- Informed agreement gestating.

b-Exclusion Criteria

- Chronic HBV carrying known by pregnant.
- Carrying another viral marker known by pregnant (HCV, HIV).

c-Terms of study:

After an informed consent by the patients, the various parameters were collected prospectively for all patients. Blood samples were taken by a trained nurse for this study during a prenatal consultation (2nd or 3rd quarter view) or at the time of delivery. HBsAg assay was performed in the laboratory of immuno-serology of the regional Hospital Hassan II of Agadir by manual ELISA.

III. Results

Four hundred and eighty-three pregnant women were included in the study. Their average age was 29.9 +/- 6.8 years with extremes ranging from 18 to 47 years old. The mean age of the current pregnancy was 36.3 +/- 7.7 [3-43] weeks of amenorrhea (WA). All these women had already had at least one pregnancy in 23.6% of cases (114/483) with an average of 1.3 [0 - 7]. All pregnant previously did not know their serological status against HBV. HBsAg was found in six of our pregnant (1.2%). One pregnant had a positive HIV serology. Patients infected with HBV were referred for specialized consultation, as well as for HIV positive patients. Novaccination against hepatitis B prior to pregnancy was observed in any of our seronegative pregnant as the six HBsAg positive pregnant.

IV. Discussion

The HBV infection is one of the most common infections in the world with about 350 million chronic carriers of HBsAg, so 5% of the general population is a reservoir for the perpetuation of viral transmission [1, 2, 3, 4, 5, 6, 7, 10,11]. Chronic infection occurs after acute infection in 5 to 10% of cases in adults or children over 5 years, in 25 to 50% of cases in children between 1 and 5 years and 90 to 95 % of cases of perinatal infection [2, 13, 14, 15]. In countries of high or medium endemicity, perinatal contamination is predominant: contamination from mother to child during childbirth, from father or child to child during infancy, it most often results from the contact of cutaneous or mucosal lesions with blood or secretions of wounds or with saliva as a result of bites or other skin break-ins. The prevalence of HBsAg in pregnant women around the world is variable (Table 1). These prevalences are probably consistent with the level of endemicity of HBV infection in these countries. The prevalence of HBsAg in pregnant women in parts of the country around the Mediterranean, such as Greece and Turkey is 3.8% [33] and 4.2% [34] respectively, it is however, lower in countries on the north shore, such as Italy 1.1% [35], France 0.65% [36] or Spain 0.4% [37]. Higher prevalences were noted in Libya 11.1% [38] and Egypt 8% [39]. In Morocco, we have only two series, one from University Hospital of Fes with a prevalence of 0.5 % [40] and the other from the military hospital of Meknes with a prevalence of 2.3% [41].

Table1: Prevalence of HBsAg in pregnant women according to international series.

<u>Series</u>	<u>Total number</u>	<u>HBsAg + number</u>	<u>AgHBs + %</u>
Limoges, France 1999 [3]	913	5	0.54
Picardie France 2010 [6]	1178	2	0.18
Benin 1992 [7]	1017	84	8.26
Taiwan 1996-2005 [21]	10327	1597	15.5
Tanzania 1995[22]	980	62	6.3
Burkina Faso2003-2004[24]	492	84	17
Tunisia [5]	2023	92	4
Fes, Morocco 2013 [40]	350	2	0.5
Meknes, Morocco 2016 [41]	1020	24	2.35
Our serie	483	6	1.2

In our series, the prevalence of HBsAg in pregnant women is 1.2%. These results confirm the interest of mandatory screening for HBsAg during pregnancy.

The infectivity of the hepatitis B virus is explained by its presence in most biological fluids of infected persons. The modes of transmission are classified vertically (mother-child essentially perinatal or even post-natal) and horizontal [1,9]. The maternal-fetal transmission is mainly responsible for the persistence of the viral B endemic, especially in the Asian country. Four modes of contamination from mother to child can be observed [19]: Transmission in utero, transmission by amniocentesis and mode of delivery, neonatal transmission and postnatal transmission. The hepatitis B virus is detectable in breast milk by PCR and breastfeeding could theoretically be a mode of transmission. This may be due to the ingestion of the virus, or by contact with excoriations or abscesses present on the nipple. Insofar newborns are properly immunized; there is no contraindication to breastfeeding [19]. The prevention of mother to child transmission of hepatitis B virus (HBV) is a measure of universal public health. The risk of mother to child transmission can indeed reach 90% depending on the viral load of the mother [1]. More than 90% of infected newborns develop chronic infection with subsequent risk of cirrhosis and hepato-cellular carcinoma [1, 2, 4, 5, 6,11]. Newborn of chronic carrier mothers' serovaccination is an effective measure to fight against this mode of transmission [29]. The anti- HBs immunoglobulin administration and vaccination in the first 24 hours after birth are recommended for infants whose mother is a carrier of HBsAg [11]. The screening of the HBsAg planned during the fourth prenatal examination (sixth month of pregnancy) is essential because only the prior knowledge of the status of mothers HBsAg positive can take, urgently in the hours following birth (12 to 24 hours), specific preventive measures with injection of anti-HBs immunoglobulin (HB Ig 100-200I according to the studies) and administration of the first dose of hepatitis B vaccine followed by the other injections at 1 month, 2 months and 6 months or to 1 month and 6 months. [1, 2, 11, 12].

Recent publications also suggest that treatment with lamivudine during the last trimester of pregnancy in pregnant women with high viral load reduces the risk of transmission in utero and perinatal of HBV whether this drug is given in combination with serovaccination [11].

V. Conclusion

Our results show that screening for HBsAg during pregnancy should be part of the antenatal assessment. It is also recommended to promote anti viral B vaccination, strengthen pre-pregnancy information and also promote pre-nuptial screening for HBsAg.

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