Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Medicine

Screening for Viral Hepatitis During Childbirth: Knowledge, Attitudes and Practices at the Kalaban-Coro Reference Health Centre, Bamako, Mali

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DOI: 10.36347/sjmcr.2023.v11i06.053 | **Received:** 02.05.2023 | **Accepted:** 11.06.2023 | **Published:** 20.06.2023

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Abstract **Original Research Article**

The aim was to assess the knowledge, attitudes and practices of women who have recently given birth in the face of positive HBsAg. Materials and methods: This was a descriptive, cross-sectional and analytical study from April 1, 2019 to March 31, 2020. Results: We collected 64 deliveries with a positive HBS-Ag out of 3935 deliveries, a prevalence of 1.6% (1/61). The median age was 27 ± 6 years. Multiparous were in the majority with 26.6%. Almost all pregnant women (96.9%) already knew their HBV HIV status. Sexual route was cited as the main mode of transmission (37.5%). The notion of previous HBV vaccination was reported in 65.6%, but none of the women had been vaccinated against HBV. HBeAg was present in 13.6% of parturients, A detectable viral load was found in 36.4%. In our series 60.9% were not taking any HBV treatment. Within the first 24 hours, 50% of newborns received seroprophylaxis. Conclusion: Screening for Hepatitis B during childbirth is useful because it reduces the so-called vertical transmission from mother to child during delivery through serovaccination of newborns.

Keywords: HBsAg, childbirth, knowledge, attitudes and practices.

INTRODUCTION

Hepatitis B is defined as an inflammation of the hepatic parenchyma associated with hepatocyte necrosis sometimes cholestasis due to an alphabetic hepatotropic virus B [1]. Hepatitis B is a life-threatening viral infection that attacks the liver and can cause acute or chronic illness. It is caused by the hepatitis B virus (HBV). HBV is a highly contagious virus, is a hundred times more contagious than the human immunodeficiency virus (HIV), and can remain stable at 25°C for seven days in dried blood [2]. Man is the only reservoir of HBV. Indeed, the hepatitis B virus is a DNA virus belonging to the *Hepadnaviridae* family; it consists of an envelope: the HBs antigen (HBsAg) and a capsid: the HBc antigen (HBcAg) and the HBe antigen (HBeAg) [3]. Hepatitis B is a major global public health problem. According to the World Health Organization (WHO), about 240 million people suffer from chronic HBV infection. Chronic hepatitis B (defined as hepatitis B surface antigen positivity for at least six (6) months).

More than 686,000 people die each year from hepatitis B infection, including cirrhosis or liver cancer [2]. The prevalence of hepatitis B is highest in sub-Saharan Africa and East Asia, where between 5 and 10% of the adult population has chronic hepatitis B.

High levels of chronic infection are also found in Latin America in the Amazon region and southern Central and Eastern Europe. In the Middle East and the Indian subcontinent, it is estimated that 2-5% of the population suffers from chronic hepatitis [4]. Chronic infection affects less than 1% of the population of Western Europe and North America. Thus, in Taiwan before the era of vaccination, the prevalence of HBsAg in pregnant women was 16.5% and half of the children born to HBV-infected mothers became chronic carriers of HBsAg [5]; this prevalence of HBsAg in pregnant women was 8.26% in Benin [6], 2.76% in Tunisia [7], 8 to 18% in Côte d'Ivoire [8.9], 10.7% in Burkina Faso [10], 5.2% in Sudan [11]. In central Morocco, seroprevalence was 2.35% [12].

In Mali, the prevalence of HBsag positive among pregnant women was 17% in 2020 at the CHU Gabriel Touré [6]. Screening for hepatitis B during pregnancy is useful because it reduces the so-called vertical transmission from mother to child during childbirth through serovaccination of newborns. Infected newborns have a 90% risk of developing chronic hepatitis B while this risk is only 5 to 10% in adults [14]. In the absence of data on hepatitis B during pregnancy at the CSRèf of kalaban Coro, it seemed necessary to us to make a study on knowledge, attitudes and practices regarding HBsAg (+) in women who have given birth.

OBJECTIVES

The aim was to assess knowledge, attitudes and practices in relation to HBsAg (+).

MATERIALS AND METHODS

It was a descriptive, cross-sectional and analytical study with a prospective data collection ranging from April 1, 2019 to March 31, 2020 or a period of 12 months. The study population: The population consisted of all deliveries at the maternity ward of the CSRéf of kalaban Coro. Sampling: This was an exhaustive sample taking into account all deliveries that met our inclusion criteria. Inclusion criteria: were included in the study, all delivered with HBsAg (+) and who agreed to participate in the survey. Non-inclusion criteria: were not included in the study were deliveries who refused to participate and those with negative HBsAg. Technique and data collection: Data collection was done in the form of a confidential face-to-face interview. Deliveries were interviewed in the diaper suite room and in the delivery room just after delivery.

Data analysis and entry: Data was entered and analyzed on IBM Word 13, SPSS 20.O software. The variables studied: quantitative variables: age range, gestity, parity. Qualitative variables: Profession, marital status, level of education, knowledge of women who have given birth about viral hepatitis and the attitude and practice of women who have given birth to the viral hepatitis virus B. ethical consideration: Before the start of the study we sent a written note to the chief physician and the other actors (head of the gynaecology-obstetrics unit, general supervisor). We explained to them the purpose and the value of the investigation. It was after obtaining informed consent that the interview of the participant was done.

RESULTS

Epidemiological aspects

Our study took place over a period of 12 months; from April 1, 2019 to March 31, 2020 and allowed us to record 64 positive HBsAg cases out of 3935 deliveries, a prevalence of 1.6%. The 20-25 age group was the most represented at 46.9% The average age was 27 years±6 years with extremes ranging from 17 to 45 years. The primary level was the most represented at 48.5%. Followed by those out of school with 37.5%. In our study, housewives were mainly represented with 65.6%. These epidemiological aspects are shown in Table 1.

Table 1: The epidemiological aspects of women who have delivered HBS-Ag positive at the reference health center of Kalaban Coro, Bamako, Mali

Age	**Staff**	**Percentage**
≤19	2	3,1
20-25	30	46,9
26-35	21	32,8
>35	11	17,2
Level of education	**Staff**	**Percentage**
Out of school	24	37,5
Primary	**31**	**48,5**
Secondary	7	10,9
Upper	2	3,1
Profession	**Staff**	**Percentage**
Housewife	**42**	**65,6**
Housekeeper	4	6,3
Student	8	12,4
Saleswoman	6	9,4
Official	4	6,3

Clinical aspects

Multiparous were more represented with 26.6%. Fever + ictera + asthenia were the most cited symptoms with 22.9% and 48.3% of deliveries knew no clinical signs of HBV. The majority of our women who have given birth (96.9%) already knew their serological status before our study. In our study, 37.5% of women who gave birth confirmed that sexual transmission is the main route of transmission. In our sample, 37.5% of women who gave birth knew that there was a vaccine that protects against HBV. In our sample, 98.4% of deliveries were not aware of the existence of HNP. In our study 59.4% thought that HBV can give complications. And that were liver complications (cirrhosis and liver cancer). Clinical aspects and knowledge are presented in Table 2.

Table 2: Clinical aspects and knowledge of postpartum women on the hepatitis B virus

Clinical signs	**Staff**	**Percentage**
Don't know	**40**	**48,3**
Fever + jaundice + asthenia	19	22,8
Muscle pain	4	4,8
Nausea + vomiting	2	2,4
Asymptomatic	1	1,2
Jaundice	17	20,5
Knowledge of status	Staff	Percentage
Yes	**62**	**96,9**
No	2	3,1
Main route of transmission	Staff	Percentage
Sexual transmission	**45**	**37,5**
Blood transmission	30	25
Mother-to-child transmission	30	25
Close contact with the entourage	15	12,5
Ways to prevent HBV	Staff	Percentage
Vaccination	**36**	**37,5**
Decontamination of soiled objects	3	3,1
HBV screening	2	2,1
Hand washing	1	1
Protected sex	30	31,3
Avoid drinking with the same glasses	4	4,2
Don't know	20	20,8
Knowledge of the PNLH in Mali	Staff	Percentage
Yes	1	1,6
NO	58	90,6
Don't know	5	7,8
Can HBV cause complications?	Staff	Percentage
Yes	**38**	**59,4**
No	10	15,6
Don't know	16	25

Aspects on attitudes and practices

The majority of women who had not been transfused (87.5%). The majority of women who had given birth were aware of vaccination prior to our study, but no women had been vaccinated against hepatitis B virus. Among those who had given birth, 90.6% shared information on HIV status with their spouses. Of our deliveries, the majority (60.9%) were not on HBV treatment. The biological examinations of this table could not be performed by 42 of our patients The majority of women who gave birth did not do regular biological monitoring, i.e. 93.7%. In our study, 50% of newborns received seroprophylaxis within 24 hours of delivery and 43.7% did not receive seroprophylaxis. Table 3 shows the aspects on provider attitudes and practices.

Table 3: Aspects of women's and caregivers' attitudes and practices

Transfused subject	**Staff**	**Percentage**
Yes	8	12,5
No	**56**	**87,5**
Concept of vaccination	Staff	Percentage
Yes	**00**	**00**
No	64	100

Sharing information with spouse on status	Staff	Percentage
Yes	**58**	**90,6**
No	6	9,4
Treatment received	Staff	Percentage
Traditional	14	21,9
Medical	8	12,5
Medical and traditional	3	4,7
None	**39**	**60,9**
Biological examinations	Actual	Percentage
HBeAg(N=22)	Positive=3	13,6
	Negative=19	**86,4**
Viral load(N=22)	Discoverable=8	36,4
	Undetectable=14	**63,6**
Biological monitoring	Actual	Percentage
Yes	4	6,3
No	**60**	**93,7**
Treatment received	Staff	Percentage
Vaccine+ Serum	32	50
Serum alone	1	1,6
Vaccine alone	3	4,7
None	28	43,7

DISCUSSION

Epidemiological aspects

In our study the prevalence of HBsAg was 1.6%. This result is similar to a study conducted in Morocco in 2016 by Sbiti M *et al* [12] which found a prevalence of 2.35% in pregnant women. It is different from that of a study carried out at the laboratory of the CHU Gabriel Touré in 2014 with a prevalence of 18.3% [14] in the general Malian population and that of Traoré A in 2020 at the CHU Gabriel Touré which had found a prevalence of 17% in pregnant women. This difference can be explained by the fact that the majority of our population had not performed the prenatal check-up during antenatal consultations (CPN). In our study the majority of patients were between 20-25 years and the average age was 27 years±6 years with extremes ranging from 17 to 45 years. Our results are close to that of Sacko D [13] who found an average age of 32+/-11 years. The young age of patients can be explained by the early acquisition of infection through vertical or horizontal transmission during childhood. Multiparous were in the majority with 26.6% similar to that of Sbiti M *et al* [12]. This result is different from that of Traoré A who found the paucipare as the majority with 52.2%. The frequency of HBsAg may be related to the number of pregnancies

Clinical aspects and knowledge

The majority of participants in our series already knew their serological status vis-à-vis the hepatitis B virus with 96.9%; unlike a study done in Morocco in 2016 by Sbiti M *et al* [12] which found 99.6% of pregnant women who were unaware of their HIV status. This could be explained by the fact that most of our deliveries were informed during the prenatal consultation. Despite the patchy information on the reality of viral hepatitis B, 48.3% did not know any correct clinical signs of viral hepatitis B in our study. This result is higher than that of Sacko D [13] who found 33.8%. And it is contrary to a study done in Cameroon in 2013 by Njoyab.O *et al* [16] which found 82.7% of the women surveyed knew the signs of viral hepatitis B. Sexual route was the most cited route of transmission (37.5%) followed by bloodstream and mother-to-child transmission (25%) each. These results are close to that of Sacko D [13] who found the sexual route (43.3%) followed by the salivary route (12.7%), the blood route (11.3%) and mother-to-child transmission (6.6%).

Njoyab.O *et al* [16] reported in their work that sexual transmission accounts for 31.3% followed by vertical transmission 25.9%. This may be explained by the fact that the sexual route is the best known by women who have recently given birth compared to other routes of transmission of the hepatitis B virus. The hepatic secondary complication was cited by 59.4% in our series. This result is different from that reported by Sacko D [13] where hepatic complication was cited in 9.3%. In Njoyab's study [16] hepatic complication was cited in 16.4% of cases. This can be explained by the fact that most of our HBsAg (+) mothers made antenatal consultations from which they were informed. Vaccination was cited as a means of prevention with 37.5% followed by safe sex (31.3%) and screening. These results are similar to those of Sacko D [13] who reported vaccination as the most cited with 27.3% followed by decontamination of soiled objects (12%) and screening (11%). Njoyab.O *et al* [16] reported vaccination in 41.7% and screening in 8.8%.

Aspects on attitudes and practices

Most of our deliveries were not transfused, i.e. 87.5% against only 12.5% of transfused carriers. This is due to measures taken in blood transfusion centres such as screening for HBV carriage and the use of single-use equipment [15]. In our study it was found that no women gave birth were vaccinated against the hepatitis B virus. This result is identical to that of Traoré AM [14] which confirms that in Mali little information circulates on the hepatitis B virus and / or negligence.

In our study, 90.6% of patients shared the information with their spouses compared to 9.4%. This result is different from that of Traoré AM [14] which found only 40% of patients who shared HIV status with their partners. This difference is due to the fact that husbands are generally involved in the antenatal consultation of their wives.

In our series, 15.6% of deliveries said their spouses had been tested for the hepatitis B virus and 84.4% said their spouses had not been screened. We found that the majority of our deliveries were not taking HBV treatment: 60.9 % against 21.5% were doing traditional treatment and 12.5% were doing medical treatment. This result is similar to that of Traoré AM [14] who found 62.5% of patients who did not follow treatment, while 22.5% did traditional treatment and 10% modern treatment. This could be explained by the fact that hepatitis B treatment is not always available, but also is not affordable for patients, despite the fact that there are molecules that can lead to an improvement in this infection. HBeAg was present in 13.6% of parturient women in our study, identical to that of Traoré A [17] who found 13.6%.

A detectable viral load was found in 36.4%. This result is different from that of Sbiti M *et al* [12] which found 89.4% detectable viral load. The risk of vertical transmission is very high if HBeAg is positive and the viral load is high. These results demonstrate the need to determine viral load in HBsAg positive parturients for PMTCT and management of pregnant women. The majority of women who gave birth did not do biological monitoring on a regular basis, i.e. 93.7%. This result is similar to that of Traoré AM [14] who had found 73.5%, which is generally due to financial problems. In the first 24 hours after delivery, 50% of newborns received seroprophylaxis and 43.7% did not receive serovaccination due to lack of financial means. This lack of seroprophylaxis is a factor in the transmission of infection in these newborns, who in turn are likely to develop chronic forms of the disease during early childhood.

CONCLUSION

Screening for Hepatitis B during childbirth is useful because it reduces the so-called vertical transmission from mother to child during delivery through serovaccination of newborns.

Conflict of interest: No conflict of interest.

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