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Recommendations on the Prevention of Mother-to-Child Transmission of the Hepatitis B Virus: Compliance Survey at the Maternity Ward of the Laquintinie Hospital in Douala, Cameroon

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Abstract

Introduction: Hepatitis B is an infectious disease of viral origin that results in inflammation of hepatocytes. Preventing vertical transmission of hepatitis B is the best way to combat this pathology. **Objective:** Our objective was to study the concordance of staff practices at the Laquintinie Hospital of Douala regarding the prevention of mother-to-child transmission of the hepatitis B virus compared to international recommendations. **Methodology:** To this end, we conducted a descriptive study with prospective enrollment of participants with a retrospective review of their medical records from March 1 to April 30, 2023. All women who gave birth in this structure during the said period were included and the data were collected on a pre-tested technical sheet; The study

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variables were socio-demographic, obstetrical and clinical. **Results:** We approached 184 participants, 85.3% of whom (157/184) were retained in our study. The average age of the women was 28.93 ± 5.90 years with extremes of 17 and 44 years. The participants were mainly single, unemployed, and with a high school education. Among the pregnant women screened, 5.7% (9/157) were positive for HBsAg and 88.9% of them previously knew their HBV serological status. Only 21.7% (34/157) had vaccination coverage against hepatitis B. The reasons for not vaccinating the 123 others were the absence of information on the subject and the lack of financial means. Apart from the 8 women known to be carriers of HBsAg verified by presentation of a pre-existing assessment, we found that 92.6% (138/149) had carried out the screening test for viral hepatitis B. In 77.8% (7/9) of cases, women carrying HBsAg were made aware of the need for specialized monitoring after delivery. Furthermore, none of the patients with unknown Hepatitis B status at the time of delivery had been screened in the labor room. We did not find any cases of prophylactic cesarean section. All newborns were bathed at birth and serovaccinated within the recommended time frame. **Conclusion:** In view of international recommendations and our results, we can conclude overall that staff practices targeting PMTCT/HBV at Laquintinie Hospital in Douala are not optimal with most critical deficiencies found, such as the failure to screen women with unknown status during labor and the low rate of vaccination counseling for seronegative women.

Keywords

Study, Prevention, Mother-Child, Hepatitis B, Recommendations

1. Introduction

According to the WHO, viral hepatitis is inflammation of the liver parenchyma secondary to a viral infection. The responsible viruses, called hepatotropic viruses, are classified according to the alphabet into five main viruses: A, B, C, D and E. Only hepatitis B and C viruses can be responsible for chronic hepatitis. Mother-to-child transmission of the hepatitis B virus is the main cause of chronic carriage of HBsAg in pediatrics. Hepatitis B poses a public health problem worldwide. The World Health Organization estimates that 2 billion or 30% of the world's population are infected with the hepatitis B virus and 350 to 400 million people are chronic carriers [1]-[3]. Mother-to-child transmission of the hepatitis B virus remains a concern in countries with high endemicity, namely those of North America and sub-Saharan Africa, including Cameroon. In these countries, almost 50% of patients are infected in childhood. The seroprevalence of HBsAg was 1% in 2016 in France [4]. In Africa, a prevalence of 6.49% was found in Nigeria in 2021 and 14.02% in Burkina Faso in 2019 [5]. A study conducted by Eloumou *et al.* in Cameroon in 2020 in the city of Yaoundé found a prevalence of HBsAg of 6.1% among pregnant women and another conducted in 2021 in the city of Mokolo in the Far North, found a prevalence of 18.4% among pregnant women [6]. Pregnant women represent a population at

particular risk for this condition. The major risk being the transmission of the virus from infected mothers to their children, which is the mode of contamination responsible for the high prevalence of this disease in certain regions of the world. Early perinatal contamination causes chronic infection in 90% of infected children, 25% of whom will die of cirrhosis and/or hepatocellular carcinoma, yet this progressive risk is only 5% when contamination occurs in adulthood [7]. The seriousness of the infection is due to its potential progression towards complications such as cirrhosis and liver cancer. Hepatitis B is responsible for more than a million deaths annually worldwide, most of which occur in developing countries considered to be areas of high endemicity, with approximately 100 million people infected in Africa compared to only 23 million people in developed countries. Prevention of mother-to-child transmission constitutes the major pillar in the fight against this infection in areas of high endemicity [8]. It is essentially based on the systematic screening of all pregnant women and, if positive, initiation of antiretroviral treatment if the indication arises, as well as early neonatal prophylaxis, continuation of the vaccination schedule and post-vaccination serological monitoring [4]. However, this prevention is not optimal in all regions of the world. Indeed, in France in 2012 Pesseas *et al*. found a HBsAg rate in pregnant women of 0.65% [9]. In Cameroon Eloumou *et al*. in 2020 found a neonatal serovaccination rate of 73.6% [6].

Given the frequency of this pathology in our environment, the severity of the associated complications and the scarcity of data on the particular subject in Douala hospitals, we proposed to conduct this study at the Laquintinie Hospital in Douala in a qualitative approach with regard to the recommendations.

2. Type and Place of Study

We conducted a descriptive study with prospective enrollment of participants with a retrospective review of their medical records.

Our study took place at Laquintinie hospital due to its long active patient queue as well as its cosmopolitan and representative character.

3. Duration and Period of the Study

Our study took place from November 2022 to July 2023, *i.e*. 08 months. The data collection was carried out over a period of 2 months from March 1, 2023 to April 30, 2023.

4. Study Population

These were parturients who came to give birth at the Laquintinie hospital in Douala regardless of their hepatitis B status and newborns of mothers carrying the hepatitis B virus.

4.1. Selection Criteria

Inclusion criteria

- All parturients received at the maternity ward of Laquintinie hospital in Dou-

ala, provided with a prenatal consultation booklet.

- Pregnancy term greater than or equal to 28 weeks of amenorrhea.
- Informed consent obtained.

Exclusion criteria

- Parturients who do not have a prenatal consultation record.
- Withdrawal from the study whatever the reason.
- Parturients whose available information was incomplete.

4.2. Sampling

We carried out consecutive sampling

Minimum sample size

To ensure that our sample is representative, the minimum sample size was calculated using the following formula applicable to descriptive studies.

[36]: $n = t2 \times p\ (1 - p)\ /m^2$; with:

n = required sample size

t = 95% confidence level (typical value of 1.96)

p = prevalence of the pathology (among pregnant women)

m = margin of error at 5% (typical value of 0.05)

According to a study carried out in Cameroon in the city of Yaoundé, the prevalence of hepatitis B in pregnant women was estimated at 6.1%, thus;

n = 88

- Materials for data collection
- Admission/hospitalization records
- Clinical files of women giving birth and prenatal consultation book
- Data collection sheets
- Materials for data entry
- Laptop
- Microsoft® office suite version 2016
- Materials for data analysis
- Laptop
- IBM-SPSS statistical analysis software version 23.0
- Scientific calculator

5. Procedure

5.1. Administrative Arrangements

Research protocol submitted and obtained research authorization from the director of the HLD and ethical clearance from the Ethics Committee of the University of the Mountains No. 2023/021/udM/PR/CEAQ.

5.2. Data Collection Procedure

In the delivery room and postpartum rooms, any parturient or woman who had given birth was approached with information about the study, in order to obtain

free and informed consent. Then, they answered the questionnaires in the survey sheet and jointly the data from their prenatal consultation logs, or if necessary those from the medical files were exploited. And for those who had an unknown or positive status for Hepatitis B, we identified and succinctly described staff practices aimed at preventing mother-to-child transmission of Hepatitis B in the delivery room, as well as the care provided to their newborns.

6. Study Variables

6.1. Socio-Demographic Variables

- Age, Profession, Marital status, Level of education, Religion.

6.2. Obstetric and Clinical Variables

- Gestational age
- Pregnancy formula
- Medical history (Hepatitis B, Hepatitis C, HIV/AIDS and others)
- Previous vaccination against hepatitis B
- Concept of hepatitis B in the family
- Practices for preventing mother-to-child transmission of the hepatitis B virus among pregnant women
- Prenatal consultation location
- Number of prenatal consultations
- Pregnancy monitoring service provider
- Hepatitis B screening
- Screening mode
- Time of screening
- Post-screening counseling
- Post-screening vaccination
- Additional assessment
- Placement on antiretroviral treatment

6.3. Monitoring of Parturients Carrying HBV

- Monitoring service provider
- Screening for hepatitis B in the work room
- Frequency of vaginal examinations
- Rupture of membranes
- Instrumental delivery
- Delivery route

6.4. Care of Newborns of Mothers with Hepatitis B Virus

- Birth weight
- Systematic bathing of newborns
- Serovaccination (dose, times, and route)

6.5. Follow-Up of Mothers Carrying the Hepatitis B Virus and Their Newborns after Delivery

- Breastfeeding
- Vaccination reminder
- Serological control

7. Statistical Analysis

Data was collected from a pre-established survey form, then entered and analyzed using SPSS version 23.0 software. The presentation of the results in the form of tables, figures or graphs was expressed using the Microsoft® 2016 office suite (Word and Excel). Quantitative variables were expressed using the mean or median and their dispersion parameter following Gauss' law of normality. The qualitative variables are in the form of numbers and percentages.

8. Ethical Considerations

This study was carried out in strict compliance with the fundamental principles of medical research, in particular.

8.1. The Principle of Interest and Benefit from Research

To do this, each participant received counseling on viral hepatitis in general and viral hepatitis B in particular, their modes of transmission, their symptoms, treatment methods and means of prevention.

8.2. The Principle of Confidentiality

The verbal and/or written consent of the respondents was obtained before submitting the questionnaire to them.

The data collected was anonymized and treated with discretion. All participant files were consulted within the hospital.

8.3. The Principle of Justice

Each woman met was free to participate or not in the study without any prejudice in the event of refusal.

9. Results

9.1. Socio-Demographic Characteristics

During the data collection period, we had a total of 242 deliveries at Laquintinie Hospital in Douala. We collected 184 and retained 157; 33 were excluded on the basis of the absence of notebooks, incomplete information and refusal to participate in the study, representing a participation rate of 85.32% (Figure 1).

The average age of the women was 28.93 ± 5.90 years with extremes of 17 and 44 years. Most were aged between 25 and 30, single, with a secondary education level and housewives (Table 1).

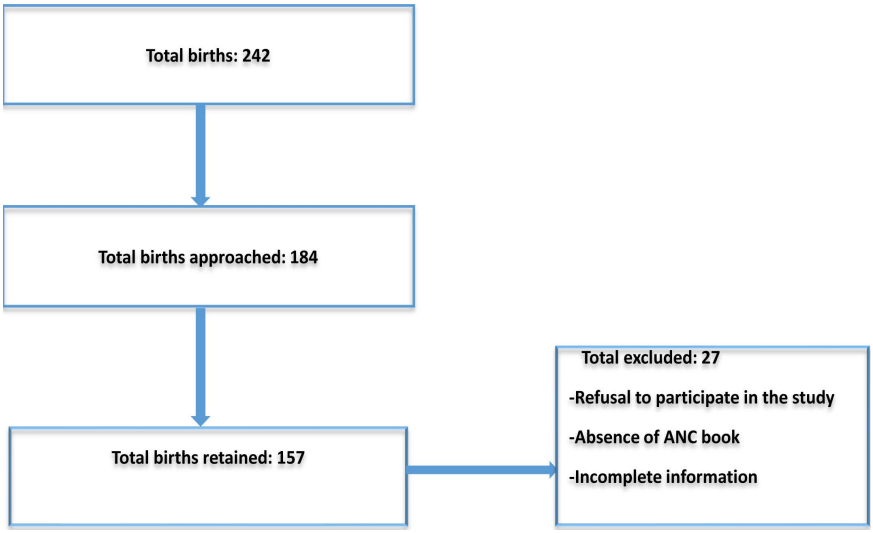

Figure 1. Study population recruitment flow diagram.

Table 1. Distribution of the study population according to age, marital status, level of study and occupation.

Variables	Modalities	Number (N = 157)	Frequency (%)
Age range (years)	[15 - 20]	7	4.4
	[20 - 25]	33	21.0
	[25 - 30]	44	28.0
	[30 - 35]	42	26.8
	[35 - 40]	29	18.5
	[40 - 45]	2	1.3
Marital Status	Single	79	50.3
	Free union	21	13.4
	Married	57	36.3
Level of education	No education	4	2.5
	Primary	18	11.5
	Secondary	89	56.7
	Higher education	46	29.3
Occupation	Unemployed/Housewife	51	32.5
	Informal sector actress	49	31.2
	Pupil/Student	31	19.7
	Private sector employee	16	10.3
	Public sector employee	9	5.7
	Others	1	0.6

9.2. Reproductive Characteristics of the Study Population

The majority of women were paucigestic and pauciparous with delivery mainly at term 111/157 (70.7%). (Tables 2-3)

Table 2. Distribution of the study population according to gestation and parity.

Variables	Modalities	Number (N = 157)	Frequency (%)
Gestation	Primigravid (1st pregnancy)	52	33.1
	Paucigravid (2 to 3 pregnancies)	62	39.5
	Multigravid (4 to 6 pregnancies)	31	19.7
	Grand multigravid (>=7 pregnancies)	12	7.7
Parity	Nulliparous	2	1.3
	Primiparous (one delivery)	57	35.0
	Pauciparous (2 to 3 deliveries)	64	40.8
	Multipara (4 to 6 deliveries)	26	16.5
	Grande multipara (>=7 deliveries)	10	6.4

Table 3. Distribution of the study population according to gestational age.

Variables	Modalities	Number (N = 157)	Frequency (%)
Gestational age in WA	Prematurity [28 - 37]	37	23.6%
	Term [37 - 41]	111	70.7%
	Post-term [41 - 45]	9	5.7%

9.3. Comorbidities

The frequency of comorbidities was 14.0%, dominated by high blood pressure and viral hepatitis B, or 5.1% of cases. However, 8 women were known to be HBs Ag positive, *i.e.* 5.1% of cases (Table 4).

Table 4. Distribution of the population according to comorbidities.

Variables	Modalities	Number (N = 157)	Frequency (%)
Comorbidities	No comorbidity	135	86.0
	High blood pressure	8	5.1
	Viral hepatitis B	8	5.1
	Asthmatic	3	1.9
	HIV infection	2	1.3
	Sickle cell anemia	1	0.6

9.4. Immunological History

34 women in our series with vaccination coverage against hepatitis B, or 21.7% of cases. The reasons for non-vaccination of the 123 others were the absence of information on the subject or the lack of financial means (Figure 2).

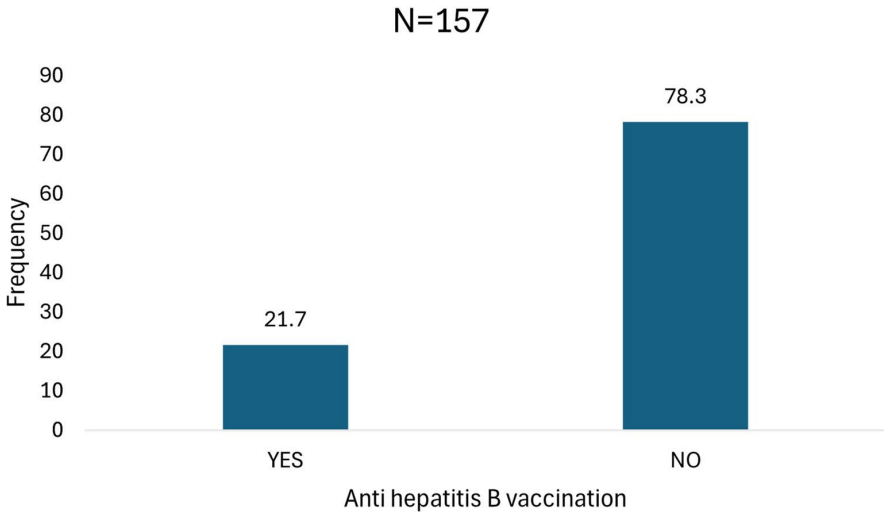

Figure 2. Distribution of the study population according to hepatitis B vaccination status.

9.5. Pregnancy Monitoring

The majority of women had achieved between 4 and 7 CPN, or 63.1%. The median number of CPNs was 6 [5]-[8], with extremes of 1 to 10 CPNs. Pregnancies were mostly monitored by gynecologists and midwives, in 2nd and 5th category health facilities following the Cameroon health pyramid (**Table 5**).

Table 5. Distribution of the population according to the number of CPNs, the provider and location of CPN follow-up.

Variables	Modalities	Number (N = 157)	Frequency (%)
Number of ANC	1 - 3	16	10.2
	4 - 7	99	63.1
	≥ 8	42	26.8
ANC provider	Gynecologist-Obstetrician	87	55.4
	Midwife	60	38.2
	General practitioner	9	5.7
	Nurse	1	0.6
ANC location	1st category HF	3	1.9
	2nd category HF	56	35.7
	3rd category HF	3	1.9
	4th category HF	27	17.2
	5th category HF	54	34.4
	Others	14	8.9

ANC: Antenatal Consultation; **HF**: Health Facility.

9.6. Practices for Preventing Mother-to-Child Transmission

Apart from the 8 women known to be carriers of HBsAg verified by presentation of a pre-existing assessment, we found that of the remaining 149, 138 carried out the viral hepatitis B screening test, *i.e.* a screening rate of 92.6%. The results revealed a frequency of positive HBsAg of 0.7% (n = 1).

In summary, the total number of women carrying HBsAg during pregnancy was 9 (5.7%), compared to 137 (87.3%) seronegative women and 11 women with unknown status (7.0%) (Figure 3).

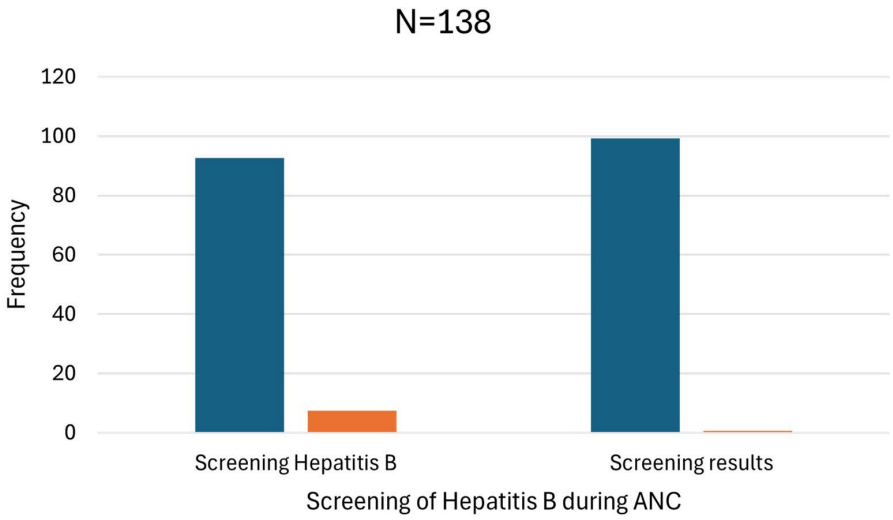

Figure 3. Distribution of the population according to the characteristics of hepatitis B screening during ANC.

9.7. Educational Talk on Maternal-Fetal Prevention in ANC

The modalities for monitoring hepatitis B-positive women included 100% Information, Education and Communication on newborn care at birth (Figure 4).

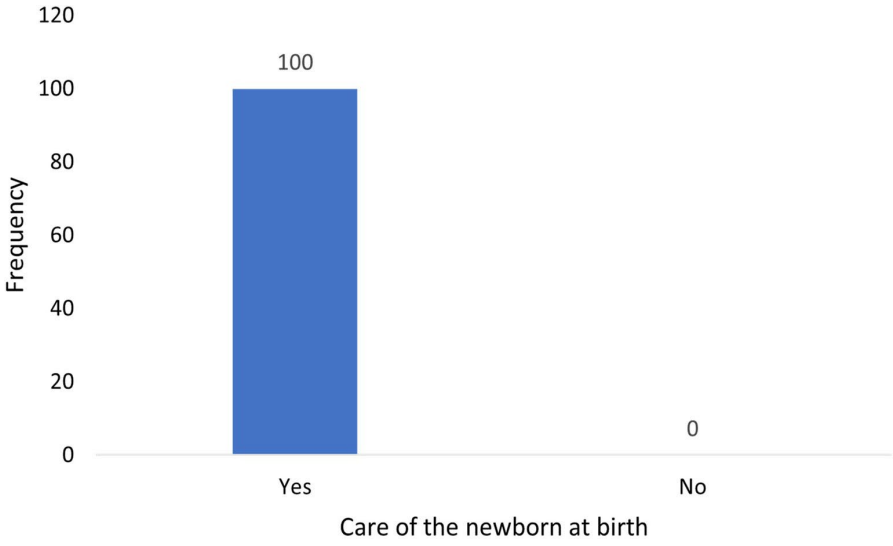

Figure 4. Distribution of HBsAg women according to the educational talk received on newborn care at birth.

Concerning additional assessments, viral load, HBeAg, anti HBs Ac, anti HBc Ac, AST//ALT, ultrasound were performed in 88.9%, 88.9%, 11.1% and 55.6% respectively (Figure 5).

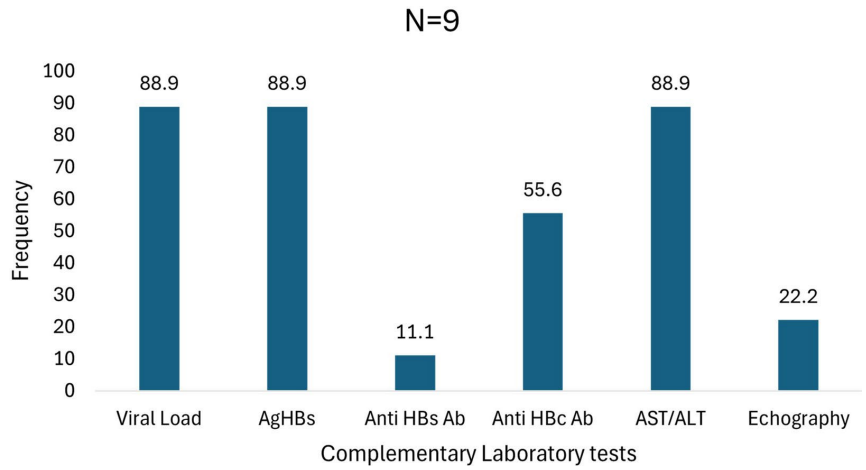

Figure 5. Distribution of HBsAg women according to the educational talk received according to the additional assessments carried out.

9.8. Starting Antiretroviral Treatment

The results of additional examinations revealed the need for treatment in 4 women (44.4%) and all of them received it (**Figure 6**).

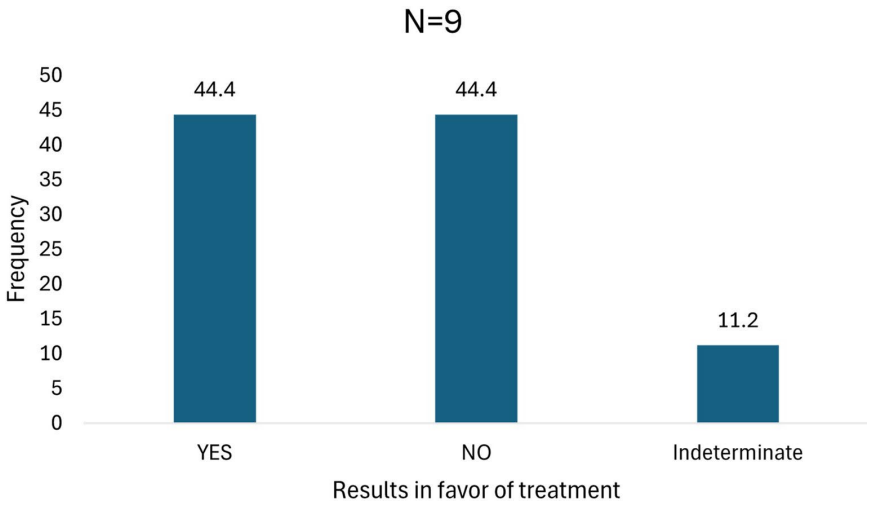

Figure 6. Distribution of women according to antiretroviral treatment.

9.9. Period of Labor

The 137 women who were HIV negative, the screening tests were less than 6 months old, hence the need for no additional liver test. However, since the 11 women did not have any liver tests, none of them had carried out the test in the delivery room, meaning no perpartum screening.

Treatment methods for HIV-positive women during peripartum and immediate postpartum.

Abstention from artificial rupture of membranes was effective in all cases.

The systematic antiseptic bath was effective in all cases (100.0%).

We found in our study that all newborns received serovaccination on time

(100.0%) (Figures 7-9).

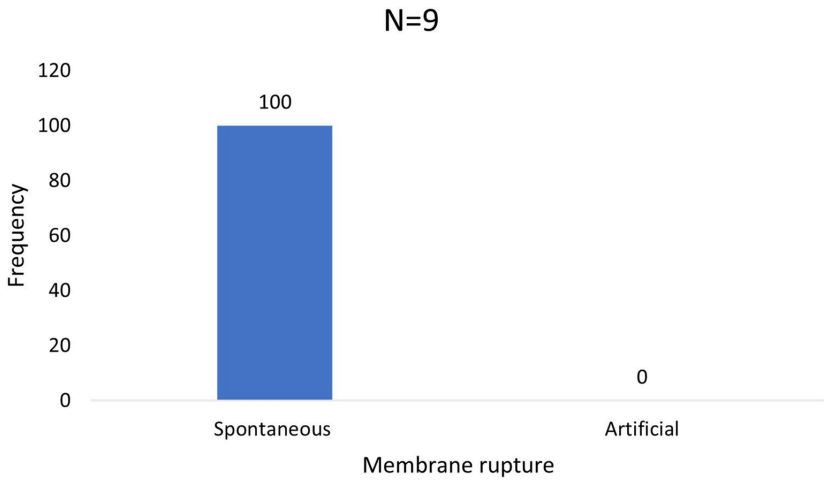

Figure 7. Distribution of HBsAg women according to the type of membrane rupture.

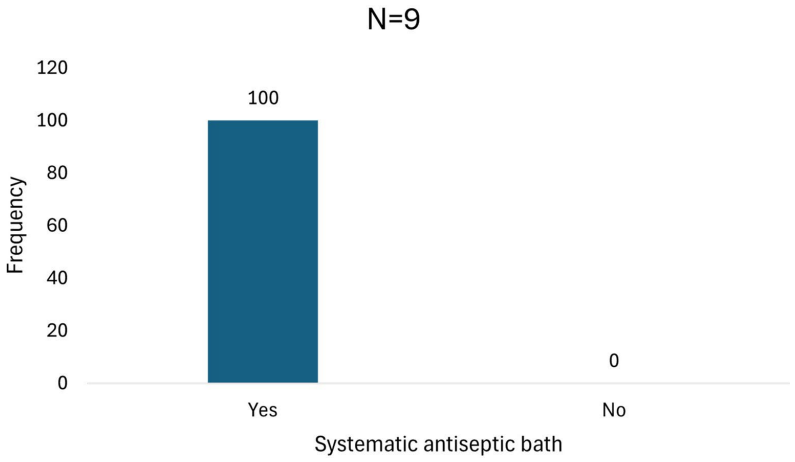

Figure 8. Distribution of newborns according to the systematic antiseptic bath care received.

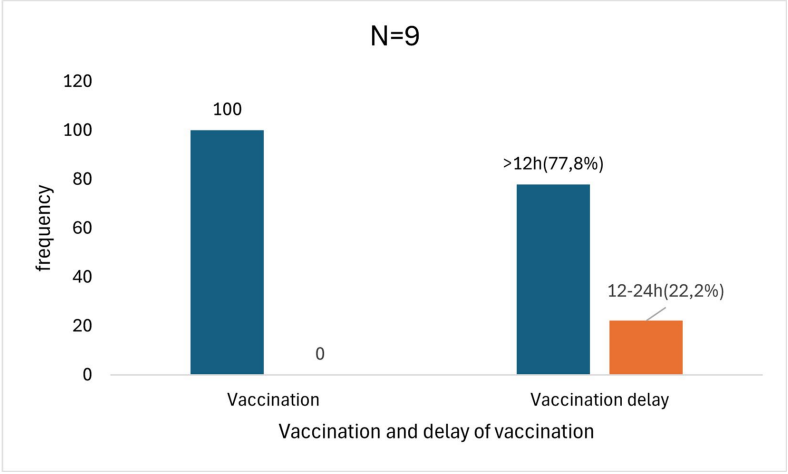

Figure 9. Distribution of newborns according to vaccination and vaccination time.

9.10. Outcomes of Pregnancies of Mothers Carrying HBsAg

Mothers carrying HBsAg had mostly given birth by vaginal delivery, *i.e.* 77.8%. Male newborns were predominant (55.6%), *i.e.* a sex ratio of 1.25. The average birth weight was 3136.1 ± 249.1 g, with extremes of 2650 and 3700 g (Table 6).

Table 6. Descriptions of pregnancy outcomes of mothers carrying HbsAg.

Variables	Modalities	Number (N = 157)	Frequency (%)
Delivery route	Vaginal delivery	7	77.8
	Emergency cesarean section	2	22.2
Neonatal sex	Male	5	55.6
	Female	4	44.4
Birth weight (g)	[2500 - 3000]	3	33.3
	[3000 - 3500]	4	44.4
	[3500 - 4000]	2	22.2

The frequency of women carrying positive HBsAg was 5.7% during the study.

9.11. Compliance to Prevent Vertical Transmission of Hepatitis B

Globally the practice of health care personnel to prevent mother-to-child transmission of HBV at Laquintinie hospital was not optimal. (Table 7 and Figure 10)

Table 7. Summary table of health personnel practices in relation to international recommendations and those relating to PMTCT/HBV at LHD.

International recommendations	Health personnel practices (compliance rate in %)
Screening of pregnant women during ANC (HAS 2016, EASL 2017)	Effective but not systematic (92.6%)
Counseling on screening of those around you (OFSP 2007)	Effective
Raising awareness of the benefits of vaccination after negative screening	Effective but not systematic (21.7%)
Counseling on birth care after positive result (all recommendations)	Effective
Avoid caesarean sections for prophylactic purposes (SNFGE 2013)	Effective
Avoid artificial rupture of membranes, instrumental deliveries and untimely touches	Effective
Promotion of breastfeeding after serovaccination (SNFGE 2013)	Effective
Systematic bathing of newborns with chlorhexidine (OFSP 2007).	Effective
Reference of HBsAg (+) patients for specialized monitoring (ACOG 2007)	Effective but not systematic (88.9%)
Counseling on the need for a vaccination booster (HAS 2009, OFSP 2007)	Effective but not systematic (66.7%)

Continued

Counseling on post-vaccination serological control 1 to 4 months after the last dose of vaccine (HAS 2009, OFSP 2007)	Effective but not systematic (88.9%)
Systematic screening in the delivery room in the event of unknown status (OFSP 2007)	Non effective (0.0%)
	Non effective (0.0%)

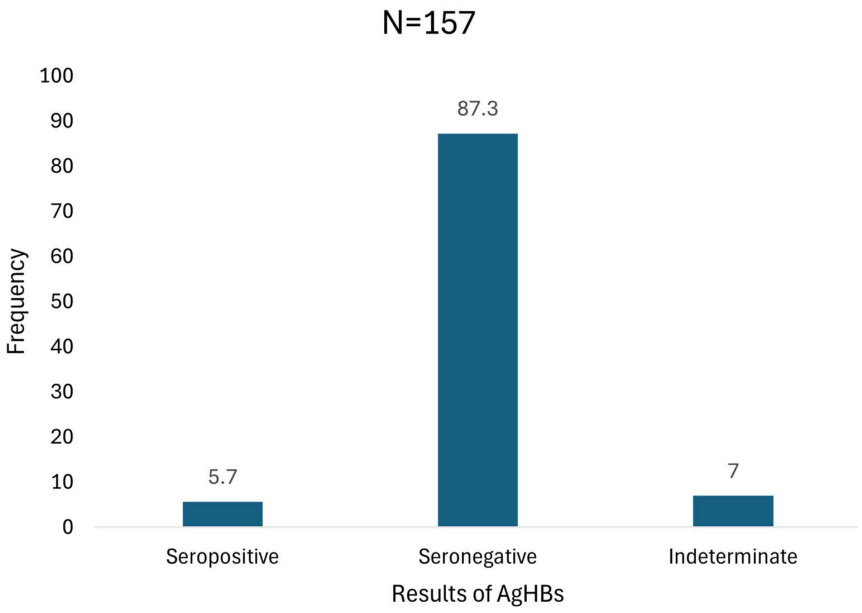

Figure 10. Distribution of women according to HBsAg screening results.

10. Discussion

The hepatitis B virus is the most common virus worldwide and one of the most contagious with serious long-term consequences. If in industrialized countries transmission is mainly linked to sexual relations or blood, in Africa, mother-child contamination in the peri- and neo-natal period of the virus is the major mode of transmission [10]. In Cameroon, the seroprevalence of HBsAg in pregnancy varies between 6.1% and 18.4% [6].

Our sample was 157 parturients selected from a sorting of 184 during the data collection which took place from March 1 to April 30, 2023.

The average age of our study population was 28.93 ± 5.90 with extremes of 17 and 44 years. The majority age group was 25 to 30 years old. This result is similar to those of Fomulu *et al*. in 2013 [11], and Chuendem *et al*. in 2018 [12] where the majority age groups were 20 to 29 years [11] and 25 to 30 years [12] respectively. This similarity is known in the literature because it corresponds to the age of maximum childbearing.

The majority level of education was secondary (56.7%). This result corroborates that of Eloumou *et al*., Njoya *et al*. [6] [13]. This similarity could be explained in our opinion by the urban setting of these three studies.

Unemployed women as well as actresses in the informal sector were the majority in our series, in agreement with Bigna *et al*. in whom almost all of the women (96%) were housewives [14].

In our series, 21.7% of the women recruited declared having been vaccinated against Hepatitis B. This rate is three times higher than the 8.07% noted by Sekene *et al*. in 2020 [15].

This discrepancy, in our opinion, is due to the weight of traditions in semi-urban and rural areas.

The reasons for non-vaccination of 78.3% of women were the absence of information on the subject in the majority of cases.

The majority of women had achieved between 4 and 7 CPN (63.1%). Pregnancies were mostly followed by gynecologists (55.4%), in 2nd category health facilities (35.7%). This result is different from that obtained by Sekene *et al*. [15] of whom 54.6% of women had performed less than 4 CPN. The semi-urban and semi-rural setting with its cultural contingencies as well as financial barriers seems to us once again to be the justification for this gap.

We found a hepatitis B screening rate of 92.6%. This rate is corroborated by those of Eloumou *et al*. in 2020 at HCY and Mohammed *et al*. in 2016 in Morocco, which are 91.7% and 91.1% of cases respectively [6] [16].

In 100% of cases, practitioners provided information in accordance with recommendations on the need for serovaccination of newborns. Practitioners adequately advised infected women on breastfeeding modalities and the need to screen and vaccinate those around them in all cases (100%). Practitioners advised mothers carrying hepatitis B on healthy lifestyle, long-term follow-up and carrying out additional examinations in 88.9% of cases. The results of additional examinations revealed the need for treatment in 4 women (44.4%) who all received it in accordance with the recommendations.

The screening tests of the 137 HIV-negative women dated them to less than 6 months ago, hence the need for an additional liver test. However, of the 11 women who did not have a liver test, none of them had carried out the test in the delivery room, meaning zero perpartum screening (0.0%).

These findings contradict the HAS 2009 guidelines and could be due to insufficient knowledge of staff regarding the recommendations on PMTCT/HBV on the one hand and on the other hand by the financial cost thereof. This would contribute to increasing the risk of mother-to-child transmission of the virus.

Which to a certain extent could maintain the increase in the incidence as well as the prevalence of Hepatitis B in our context. This difficulty could be overcome by the use of Rapid Diagnostic Orientation Tests (TROD) in the delivery room, the performance of which on whole blood was approved by the HAS 2009 [17].

Abstention from artificial rupture of membranes was effective in all cases of instrumental delivery (100%).

Vaginal examinations were done every 4 hours as recommended. This can be explained by the fact that practitioners attribute the same risk of transmission to

HBV as for HIV and, as with the latter, this practice is already an established fact.

In our study, all newborns received systematic antiseptic bathing and serovaccination (100%) within the recommended time frame. The doses of vaccine and serum administered to newborns were standard at 10 micrograms in accordance with the HAS 2009 recommendations [17].

Our result is, in our opinion, superimposable to that of Sekene *et al*. (94.4%) [15].

All newborns received the serum and the vaccine intramuscularly at the anterolateral aspect of the thigh and at two different sites respectively. This is consistent with the recommendations.

Concerning the IEC (Information Education and Communication) on the moments of postnatal vaccination against hepatitis B of the EPI and the moment of postvaccination serological control of the newborn, they were efficient in 66.7 and 88.9% of cases respectively. A specialist consultation was recommended for 7 of the nine HIV-positive women, or 77.8%. This is not in complete agreement with the HAS 2009 recommendations; *i.e*. a booster at 1 and 6 months for full-term newborns and premature babies ≥ 32 weeks or at 1, 2, 6 months and after 1 year for premature babies < 32 weeks.

Since 2005, a vaccine against viral hepatitis B has been introduced among the vaccines in the expanded vaccination program. This is administered at 6, 10 and 14 weeks with a booster at 15 months according to the vaccination schedule. However, this national public health initiative should not exempt health personnel from giving advice to mothers carrying HBsAg on the necessity and importance of booster vaccinations for their children. The absence of this serological control runs the risk of missing cases of vaccination failure or cases of neonatal contamination.

From our study it appears that a specialized consultation with a hepato-gastroenterologist for subsequent follow-up was recommended in 7 of the nine HIV-positive women, or 77.8%. This result is different from that obtained by Sekene *et al*. [15]. From their observation, no midwife would refer women for specialized follow-up. This demonstrates knowledge of the practice of PMTCT /HBV of health professionals at Laquintinie Hospital in Douala involved in prenatal consultations on the aspect concerning the subsequent monitoring of the disease in women infected with the Hepatitis B Virus although it is not optimal.

The frequency of women carrying positive HbsAg was 5.7% during the study. This result corroborates with that of Eloumou *et al*. [6]. This similarity would indicate a probable homogeneity of the prevalence of HBV infection in the Cameroonian population.

On the other hand, this result is different from that of Mohammed *et al* in Morocco who reported a rate of 2.3% of positive cases [16]. This difference is probably a reflection of the high endemicity for hepatitis B in our country Cameroon.

11. Limitations of the Study

- Possibility of bias linked to the retrospective collection of data in our study.

- The short period of our study did not allow us to evaluate all aspects of PMTCT/HBV, in particular the monitoring of newborns of mothers carrying Hepatitis B regarding vaccination booster and post-vaccination serological control.

12. Conclusion

At the end of our study, it emerges that

- Most of the women recruited had never been vaccinated against Hepatitis B.
- Almost all practitioners prescribed screening for Hepatitis B.
- Most of these practitioners did not educate women about vaccination against hepatitis B after negative screening.
- All women who tested positive and required antiretroviral treatment received it.
- Most practitioners referred patients for specialized follow-up.
- Under no circumstances did practitioners carry out systematic screening in the delivery room among parturients.
- No practitioner performed prophylactic cesarean sections targeting PMTCT/HBV, and the reassessment of the participants was carried out within the standards of international recommendations.
- All newborns of infected mothers received a systematic bath at birth.

on time, and the site of care administration was only the anterolateral aspect of the thighs.

In all cases, the doses of vaccine and serum were appropriate, in accordance with international recommendations.

Contribution to Science

Our study is part of a quality approach through this evaluation survey which highlights the merits of the evaluation of any procedure and protocol over time.

Here, everyone involved must check all the boxes in this care offer.

That is to say the prevention of vertical transmission of the hepatitis B virus from the mother to her newborn.

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Contribution of Authors

Essome supervised the study and wrote the manuscript:

Mbouo collected the data

Tocki and Essome Tocky provided the English translation as well as the formatting of the manuscript.

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Ndolo; Eyenga; Ehète Obono; Ofakem; Mounchikpou; Mwandje; Ekono; Wafo read and corrected the manuscript; Foumane and Nana supervised the study.

All authors have read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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