



ORIGINAL RESEARCH PAPER

Microbiology

SEROPREVALENCE OF AGHBS IN THE PROVINCE OF OUADDAÏ: CITY OF ABECHE-CHAD.

KEY WORDS: Virus, Seroprevalence, HBsAg, Abèche, Chad.

H. I. Nourdja*	Centre Hospitalier Universitaires d'Abéché-Tchad ; BP : 87. *Corresponding Author
A. Boiro	Institut de Recherche En Biologie Appliquée de Guinée (IRBAG/Kindia); BP: 146.
L. II .Soumah	Institut de Recherche En Biologie Appliquée de Guinée (IRBAG/Kindia); BP: 146.
M. B. Bah	Institut de Recherche En Biologie Appliquée de Guinée (IRBAG/Kindia); BP: 146.
T.A. L. Balde	Institut de Recherche En Biologie Appliquée de Guinée (IRBAG/Kindia); BP: 146.
A. Chatte	University ofNdjamena - Chad;BP: 1117.
A .M. Moussa	University ofNdjamena - Chad;BP: 1117.
N. Alio	Centre Hospitalier Universitaire Général de Référence (CHU-GN);BP: 130.
S. Boumbaly	Centre de Recherche en Virologie-LFHG;BP:5680.
M.S.Traore	Institut de Recherche En Biologie Appliquée de Guinée (IRBAG/Kindia); BP: 146.
M. Y. Boiro	Institut de Recherche En Biologie Appliquée de Guinée (IRBAG/Kindia); BP: 146.

ABSTRACT

Introduction: Hepatitis B is a viral infection causing inflammation of the liver which can become chronic and lead to liver cirrhosis and primary cancer. **Objective:** To help improve the diagnosis of hepatitis B virus in Ouaddaï province. **Methods:** This is a prospective, descriptive, cross-sectional study covering a period of nine (9) months from 1 April to 31 December 2023. The presence of the hepatitis B virus surface antigen (HBS Ag) was identified by the immunochromatographic method (TROD) before being confirmed by the enzyme-linked immunosorbent assay (ELISA). **Results:** The study involved a total of 808 consenting patients aged between 14 and 60 years, with a seroprevalence of 12%, i.e. 97 HBsAg-positive cases, predominantly males (8.91%) and females (3.09%), and a mortality rate of 1.03%. **Conclusion:** At the end of the study we found a seroprevalence of 12% (97/888) with a male predominance of 8.91%. Lack of knowledge about the virus and its transmission routes are factors that favour the spread of the hepatitis B virus in this province. This could be explained by the low rate of people vaccinated, with 3 cases (0.35%).

INTRODUCTION

Hepatitis B is a viral infection that causes inflammation of the liver, which can become chronic and lead to liver cirrhosis and primary cancer [8; 7]. Symptoms of acute disease are essentially inflammation of the liver, with or without jaundice, and digestive disorders with nausea and vomiting [8]. Because of its frequency, complications and socio-economic consequences, hepatitis B virus (HBV) infection is a major public health problem in many parts of the world [3].

Hepatitis B is one of the most widespread diseases in the world, according to the World Health Organisation [2]. The WHO estimates that 254 million people will be living with chronic hepatitis B in 2022, with 1.2 million new infections every year. Of these, at least 360 million are chronic carriers, mainly in Asia and Africa [6;10].

The World Health Organisation (WHO) estimated in 201553. That the global prevalence of hepatitis B virus (HBV) infection in the general population was 3.5% (around 2 billion people) [5;9].

HBV infection is characterised by acute hepatitis, usually without symptoms, and chronic hepatitis. The prevalence of infection is low in Western Europe, Australia and North America, where the frequency of carriage is between 0.1-0.5% [3].

This prevalence is very high in tropical Africa and South-West

Asia, where the frequency of chronic carriage can reach 20% of the population. Vertical transmission is common in asymptomatic women who are unaware that they are carriers. The high contagiousness of the viral hepatitis B virus is linked to its presence in most biological fluids [3].

II. Materials and working methods

II.1 Study setting: Our study was carried out in the town of Abéché, Republic of Chad. The Centre Hospitalier Universitaires d'Abéché-Tchad was used as the setting for the study.

II.2 Working method: This was a prospective analytical study from 1st April to 31st December 2023, i.e. a period of 9 months, carried out at the University Hospital Centre (CUH-A) in Abéché, Chad.

It focused on patients who came to the CUH-A for consultations, aged between 14 and 60, and who voluntarily agreed to be screened.

Sampling was based on height (n=808).

II.3 Bio-material: human serum was used as bio-material.

II.4 Study variables :

II.4.1 Biological variables:

- Immunochromatographic ;

- ELIZA

Epidemiological variables :

- Sex ;
- Ages.

RESULT

During the nine (9) month survey period, a total of 808 people were screened in the town of Abéché.

Table I: Distribution Of Samples By Sex

Nombre total	Sexe Masculin	Pourcentage (%)	Sexe Féminin	Pourcentage (%)
808	409	50,61	399	49,38

In the province of Ouaddaï, in the town of Abéché, we sampled 808 patients, 409 (50.61%) males and 399 (49.38%) females (Table I).

Table II: Prevalence Of HBsAg

Effectif Total	Cas Positif	%	Cas Négatif
808	97	12	711

Table II shows that we analysed a total of 808 samples that were screened, i.e. 97 positive cases with a prevalence of 12% (Table II).

Table III: Breakdown Of Cases By Gender

Sexe	Effectif	Cas Positif	%
Masculin	409	72	8,91
Féminin	399	25	3,09

We analysed a total of 808 samples, the prevalence of which among males was 72 (8.91%) and among females 3.09% (Table III).

Table IV: Breakdown By Age Group

Age	Nombre testé	Cas positif	%
15-20	173	9	1.11
21-25	130	18	2.22
26-30	180	16	1.98
31-35	128	17	2.10
36-40	74	13	1.6
41-45	36	4	0.49
46-50	34	8	0.99
51-55	23	7	0.86
56-60	30	5	0.61
Total	808	97	12

Table IV shows that the age groups most affected are represented respectively as follows: 21-25 years with a prevalence of 2.22%; 31-35 years with 2.10%; 26-30 years 1.98% and 26-40 years 1.60%.

The age groups less affected include: 41-45 years with a prevalence of 0.49%.

DISCUSSION

During our study of the prevalence of hepatitis B in the Province of Ouaddaï: City of Abéché-Chad, we had a sample of 808, among whom we found 97 patients with hepatitis B virus, with a prevalence rate of 12% of cases carrying HBsAg. This prevalence is lower than that achieved by Ali Mahamat Moussa et al [1] in N'djaména during a study in 2017 on a population of 992 hospitalised patients, 200 of whom (20.1%) had cirrhosis of the liver or hepatocellular carcinoma.

In our study we used the immunochromatographic test technique which determines AgHBs, and confirmed by the enzyme-linked immunosorbent assay. Similarly, N. Bessimbaye et al [4] in Ndjamena-Chad used an immunochromatographic (IC) test and confirmed by enzyme immunoassay (IE) with a prevalence of 13.5%, which is higher than ours.

Males predominated in our study with 50.61% (409), which is comparable to the result obtained by Ali Mahamat Moussa et al [1] in N'Djaména who found a percentage of 63.5% (127)

among males in their study on HBsAg seroprevalence in patients with liver cirrhosis and hepatocellular carcinoma.

The age group most affected in our study is 21-25 years with 2.22% (18 cases) which is lower than that found by Sylla K et al [11] in Guinea had found 17.5% (55 cases) between 16-30 years in their study.

CONCLUSION

This study enabled us to determine the prevalence and status of the hepatitis B virus in the town of Abéché in the province of Ouaddaï among patients attending the University Hospital Centre (CUH-A) in Abéché-Tchad over a nine-month period. We found that attitudes in the event of exposure, protection against viral hepatitis B with investigators who are doctors and risk factors were considered to be factors favouring the spread and ignorance of the existence of viral hepatitis B, lack of knowledge of the virus, lack of information about the vaccine against this virus and transmission routes (sexual, perinatal, parenteral). In a population of 808 patients, the prevalence was 12%, with 97 positive cases, i.e. a prevalence of 8.91% for men and 3.09% for women.

REFERENCES

1. AM moussa, et al. Seroprevalence of HBsAg in patients with liver cirrhosis and hepatocellular carcinoma in N'Djaména-Tchad 2017; vol.3; No003; June 2017; p3-27.
2. Aulnay BERNARD, Prévalence de l'infection par le virus de l'hépatite B, dans une population de sujets migrants pris en charge au Centre de vaccination de Côte-d'Ivoire au cours de l'année 2018, 06/02/2020, Thèse Doctorat d'état, 80P.
3. Demba SACKO, Connaissances, Attitudes et Pratiques des Consultants à propos de l'hépatite Virale B Au Centre de Sante de Référence de La Commune IV du District de Bamako, PhD Thesis 09/04 / 2015, 84 P
4. N. Bessimbaye, et al, 'Séroprévalence de l'AgHBs et de l'anticorps Anti VHC chez les personnes infectées par le VIH1 à N'Djaména-Tchad,' Bulletin de la Société de Pathologie Exotique, 2014; vol. 107:327-331 ;
5. Nanelin Guingane, Prévention de la transmission mère-enfant du virus de l'hépatite B au Burkina Faso : état des lieux et nouvelles stratégies, these de doctorat, 9 Mar 2022, 123P
6. World Health Organisation, Hepatitis B, 2024.
7. Pauline Kiswendsida Yanogo, Estelle Nadine Sanou, Jean Kabore, Nicolas Meda. Facteurs Associés au Portage de l'AgHBs chez les Personnes Dépistées en Milieu Communautaire à Ouagadougou au Burkina en juillet 2018, Vol 23, pp 47-52.
8. Rachelle D. Profil épidémiologique et sérologique du virus de l'hépatite B dans un milieu urbain de Bamako ;Thèse Med ; Bamako 2011 ; p 18.
9. SIMONDON Anne, Étude PREVAC B 2 : Prévalence de l'infection par le virus de l'hépatite B et prévention de l'hépatite B chez les migrants originaires d'Afrique subsaharienne et d'Asie, thèse de doctorat en médecine générale en France, 2 mai 2014, 107P.
10. TRAORE Fatoumata ; Dépistage de l'hépatite B chez les migrants originaires d'Afrique subsaharienne et d'Asie : étude qualitative sur les freins des médecins généralistes, thèse doctorat d'état en médecine, 08 juillet 2014, université de paris , 89P.
11. Sylla K et al ;Hépatitis virale B en milieu pénitentiaire en Guinée : états de lieu dans la maison centrale de Conakry, RAFMI 2019 RAFMI 2019; 6 (1 ; 6 (1-1) -1) :1618-20-21 P.P. 162.