

Epidemiology of Hepatitis B in Salahaldeen

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Abstract

Background: Viral hepatitis has gained little attention and funding from global health policymakers. Every year one million people die from viral hepatitis-related chronic consequences. Iraq, a country of intermediate endemicity for hepatitis B rates has noted an increase with a stated prevalence rate of 1.6% among the general population.

Materials and Methods: Data of reported 21,626 personnel who were investigated for HBsAg were retrieved from the Salahdeen health directorate covering a period of one year (2018). Tables and figures were used to summarize the data.

Results: The prevalence of HBsAg was 1.2%; males were affected more than females. Winter season carried more positive records of hepatitis B than other months of the year. The majority of HBsAg positive were between 15-45 age group; zero cases were recorded below 15 years of age.

Conclusion: Monitoring the general population and subpopulation is a continuous process that is required to control hepatitis B; encouraging Hepatitis vaccination and promoting education about risky behaviors is needed.

Key words: Hepatitis B, epidemiology, pattern of HB, HBs Ag

Introduction

Viral hepatitis is of extreme concern because of the burden of illness and demise it causes, in addition to the potential for outbreaks and epidemic spread [1].

Approximately one third of the world population has serological evidence of past or present infection by HBV. Globally, the prevalence of HBV infection reached 3.5% which literally means that nearly 257 persons are living with HBV per million. Viral hepatitis has drawn little attention and funding from global health policymakers. The estimated prevalence of hepatitis B surface antigen in the Eastern Mediterranean region countries was 3.3%; reflecting 21-28 persons living with HBV per million, while the percentage rises to 6.1% of the African population, and 6.2% of the Western Pacific region [2,3].

Iraq, is an Eastern Mediterranean country of intermediate endemicity for hepatitis B with a stated prevalence rate of 1.6% in the general population [4]. The usual mode of transmission is blood transfusions or repeated exposure to blood and its derivatives. According to the WHO records Iraq reported (3,674) cases for hepatitis B. This was owing to the enlargement of diagnosis in district labs. Each district has an enzyme-linked immunosorbent assay (ELISA) machine for hepatitis diagnostics [1,4].

Hepatitis B virus transmission is associated with increasing viral loads and is more infectious than hepatitis C, with a transmission rate of up to 30% being reported. HBV exposure can occur in the following situations: Sexual contact (partner infected with HBV, multiple sexual partners, men who have sex with men), parenteral contact (injection drug users, hemodialysis, and healthcare workers), household contacts (infected parents/siblings, shared personal hygiene items like toothbrushes, razor blades, nail clippers). It had been suggested that these select populations should be routinely screened by testing for hepatitis B surface antigen, antibody against hepatitis B surface antigen (anti-HBs), and antibody against hepatitis B core antigen (anti-HBc) [5,6].

The natural progression of HBV to chronic infection is inconstant, ranging from an inactive HBsAg carrier state to a more or less progressive chronic hepatitis, hypothetically evolving to cirrhosis and hepatocellular carcinoma (HCC) in many cases [7,8].

During the 1980s, Iraq was considered to be a country of an intermediate endemicity with hepatitis B as reflected by 3% seroprevalence of HBsAg in the normal population [9].

After 2013 an increase in viral hepatitis rates was notable; the overall seroprevalence of HBsAg was found to be 4.73%. These viral chronic infections may not show symptoms for a long period, sometimes years or decades. At least 60% of liver cancer cases are due to late testing and treatment of viral hepatitis B [10,11].

Materials and Methods

A descriptive study was done on data of one-year reports of people with suspected hepatitis B, documented in the public health department of Salahdeen health directorate from 1st January to end of December 2018. A total of 21,626 records were entered into Statistical package of social sciences (SPSS) version 22. Data were presented with frequencies and percentages; tables and figures were also used to summarize the data.

Results

A total 21,626 patients were tested for HBsAg; as shown in Figure 1; 264(1.2%) were positive, and 21,362 (98.8%) were negative. Of those with a positive test 151(57.2%) were males, and 113(42.8%) were females. Table 1 demonstrates the distribution of the studied sample by gender.

The higher number of reported cases were in winter months November 28(1.6), January 30 (1.5%), then in March 39(1.6%). This figure is also true for reported prevalence among males and females, as shown in Figure 2 (page 40).

The commonest positive cases percentage was among those aged 16-45 years, 215(1.32%), followed by 6-15 years 23(1.08%). Zero positive cases were reported for lower than 5 years old, as shown in Table 2.

Discussion

The current study showed that the majority of tested subjects were negative for HBsAg and that the prevalence of HBV was 1.2%. This result is in agreement with findings from another study in Mosul 2013 (HBV 1.2%) [12], Dohuk 2018 (HBV 1.1%) and Diyala in 2012 (HBV 1.1%) [13,14] which probably reflects both the similarity of health system recording and the low prevalence of HBV in these similar societies.

It also agrees with findings from another conservative society like Saudi Arabia where in 2019 HBV seropositive prevalence was 1.3 % among the general population [15]. But our findings were lower than the results reported in Lebanon in 2016 where the seropositive prevalence of hepatitis B was 1.7% [16]. It is also lower than the levels reported in Baghdad in 2012 among the general population where HBV prevalence was 3.0% [17] as well as lower than the data reported from Samara district where the overall seroprevalence of HBsAg was found to be 3.2% [8]. These differences might be related to population density between governorates and capital. It has been described that these variations among the same country are very commonly conveyed and probably justify a regular monitoring of seropositive levels among the general and sub populations [18].

Figure 1: The distribution of patients according to HBsAg positivity

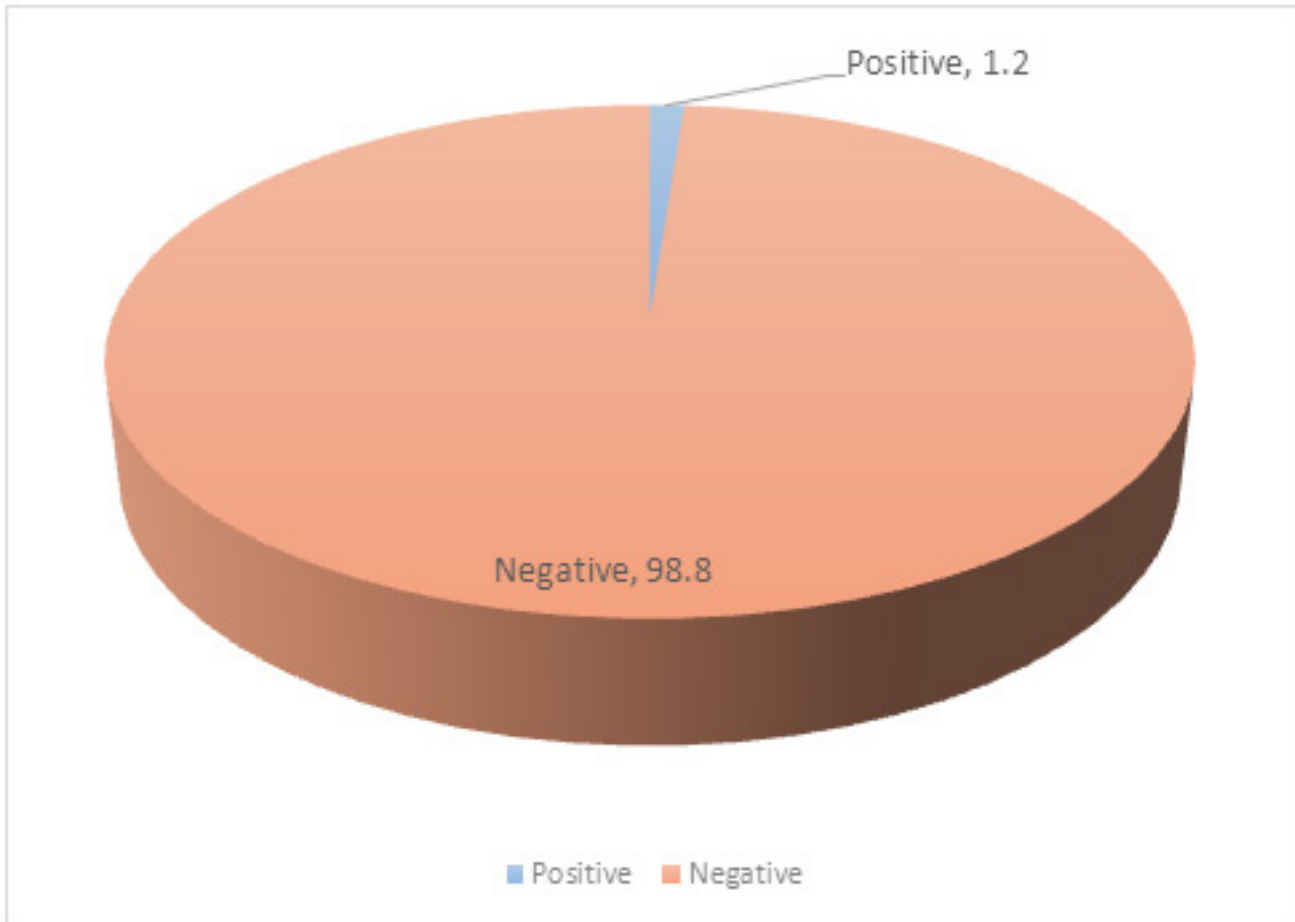
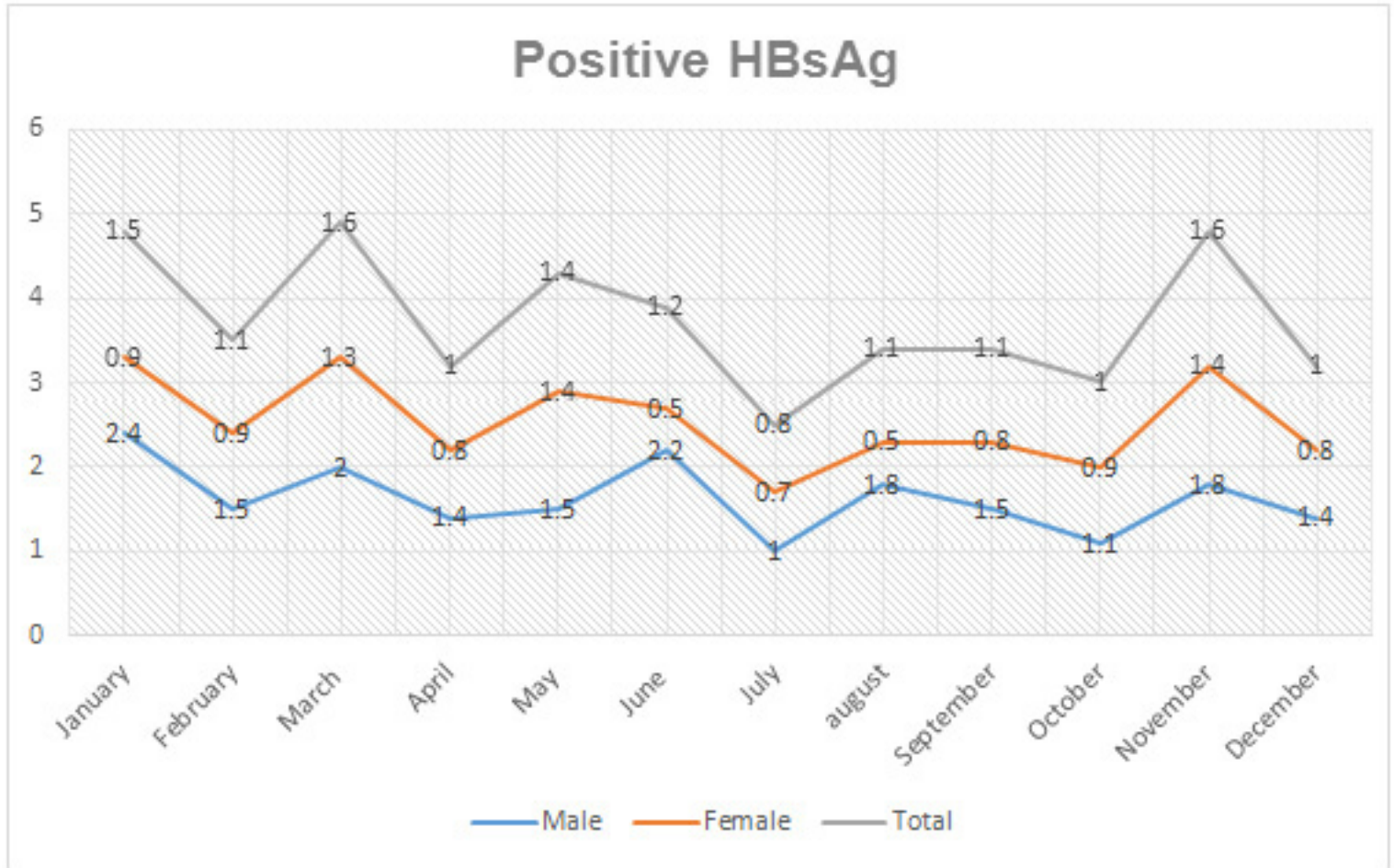


Table 1: distribution of study sample according to gender and HBsAg.

Hepatitis B status	Male		Female		Total	
	F	%	F	%	F	%
Positive HBsAg	151	57.2	113	42.8	264	100.0
Negative HBsAg	9038	42.3	12324	57.7	21362	100.0
Total	9189	42.5	12437	57.5	21626	100.0

Table 2: distribution of positive HBsAg cases according to age

Age	Positive HBsAg		Total tested	
	F	%	F	%
<1 year	0	0	9	100%
1-5y	0	0	201	100%
5-15y	23	1.08	2125	100%
15-45y	215	1.32	16279	100%
>45y	26	0.86	3012	100%
Total	264	1.22	21626	100%

Figure 2: The distribution of positive cases detected according to month of registration

Hepatitis B tends to occur among males (57.2%) more than females (42.8%) agreeing with results from Basra by Al Rubaye A. et al in 2016 [19]. This might be related to the lifestyle of males that allows them to be freer and more up-to-the-minute with society trends like tattooing and piercing; probably further research might focus on HBV-causing trends among the youth.

The higher reported cases were in cold months, nearly 1.6% in November, 1.5% in January, then in March 39(1.6%). There are few to no Iraqi studies that correlate seasons to the prevalence of hepatitis yet in USA seasonality of illicit drugs has been reported to be higher in winter than in summer among the USA teens (12–17 years of age). Additionally, a recent longitudinal study of cocaine and cocaine metabolites revealed a clear seasonal difference indicative of human seasonal cocaine use patterns [20,21].

This observation could help in clearing up seasonal occurrence of HBV in developed countries although drug abuse is present in our country. In one study, it had been noted that the administration of Hepatitis B vaccine during winter was found as an important predictor of the low effectiveness of vaccination. To improve the effectiveness of Hepatitis B vaccination in the governorate, cold chain control should be addressed with particular attention to the winter season [22]. The prevalent use of hepatitis B immunization in newborns has considerably reduced the occurrence of HBV infections. Between the pre-vaccine era (which can range from the 1980s

to the early 2000s) and 2015, the proportion of children under the age of five years who became chronically infected fell from 4.7% to 1.3%. The residual infections generally occur from the mother at birth or through contact with other infected young children [2].

Thus, the WHO elimination plan focuses on vaccination; it is after all the primary intervention, since the global incidence of chronic hepatitis B is largely driven by mother-to-infant and early-childhood infection. Hepatitis B vaccine has been integrated with four other vaccines (for diphtheria, tetanus, pertussis, and Haemophilus influenzae type b infection) in a pentavalent formulation. Nonetheless, there were still approximately 4.7 million new chronic hepatitis B cases in 2015, and the 2030 goal of reducing that number by 90% requires additional measures [2, 6, 23].

References

1. WHO. EMRO. Iraq, Viral hepatitis. World health organization, Eastern Mediterranean Office. [Online]; updated 2020. Available at <http://www.emro.who.int/irq/programmes/hepatitis.html>
2. WHO. Global hepatitis report 2017. Geneva: World Health Organization; 2017:83. Available at <http://www.who.int/iris/handle/10665/255016>
3. Marcellin P. Hepatitis B and hepatitis C in 2009. *Liver International*. 2009; 29: 1-8.
4. Tarky AM, Akram WA, Al-Naaimi AS, Omer AR. Epidemiology of viral hepatitis B and C in Iraq: A national survey 2005-2006. *Zanco J Med Sci* 2013; 17:370-80
5. CDC, Division of Viral Hepatitis, Frequently Asked Questions. [Online]. Centers for Disease Control and Prevention. Hepatitis B; updated 2020. Available at: <http://www.cdc.gov/NCIDOD/DISEASE/HEPATITIS/b/faqb.htm>
6. Mast EE, Margolis HS, Fiore AE, Brink EW, Goldstein ST, Wang SA et al. Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep*. 2005; 54(RR-16):1-31
7. Hoofnagle J, Doo E, Liang T, Fleischer R, Lok A. Management of hepatitis B: summary of a clinical research workshop. *Hepatology*. 2007;45:1056-75
8. Martinot- Peignoux M, Boyer N, Colombat M. Serum hepatitis B virus DNA levels and liver histology in inactive HBsAg carriers. *J Hepatol*. 2002; 36:543-6
9. Wijdan A.Hussein, Abdul Rhida Al – Abassy : Hepatitis Profile In Baghdad 2002, dissertation for, board degree in community medicine. 2002. Al Mustansirya University.
10. Alsamarai AM, Abdulrazaq G, Fatah A, Alobaidi AHA. Seroprevalence of Hepatitis B Virus in Iraqi Population. *J Vaccines Immunol*. 2016: 102.
11. Alsamarai AM, Abdulrazaq G, Alobaidi AHA. Seroprevalence of Hepatitis C Virus in Iraqi Population. *JOJ Immuno Virology*. 2016; 1(3)
12. Amin R. Prevalence of HBV and HCV in blood donors in Mosul city. *Tikrit Journal of Pure Science*. 2013; 18 (3)
13. Ramadhan AA. Prevalence of Hepatitis B and C virus infections at premarital screening program in Duhok, Iraq. *Duhok Medical Journal*. 2018;12(1), 13-23
14. Noaman N. Prevalence of Hepatitis C Virus Infection Among Blood Donors and Certain Risky Groups in Diyala Province. *Diyala Journal of Medicine*. 2012; 2(1)]
15. Aljumah A, Babatin M, Hashim A, Abaalkhail F, Bassil N, Safwat M, Sanai F. Hepatitis B care pathway in Saudi Arabia: current situation, gaps and actions. *Saudi J Gastroenterol*. 2019; 25: 73-80
16. Antoine A, Kheir S, Saba J, Ammar W. Epidemiology of hepatitis B and hepatitis C in Lebanon. *Arab Journal of Gastroenterology*. 2016; 17(1)
17. Al Hamadani A, Al Rawy S, Khamees H. Retrospective Seroprevalence Study of Hepatitis B and C in Iraqi Population at Baghdad: A Hospital Based Study. *Iraqi J. Comm. Med*. 2012; 3: 186-190.
18. Abbas F. Use ELISA technique to detect viral hepatitis in Thi-Qar province: a retrospective study. *Thi-Qar Medical Journal*. 2011;5(3): 71- 76
19. Al-Rubaye A, Tariq Z, Alrubaiy L. Prevalence of hepatitis B sero-markers and hepatitis C antibodies in blood donors in Basra, Iraq. *BMJ Open Gastroenterol*. 2016;3(1):e000067.
20. Fares A. Seasonality of hepatitis: a review update. *J Family Med Prim Care*. 2015;4(1):96-100.
21. Mari F, Politi L, Biggeri A, Accetta G, Trignano C, Di Padua M, et al. Cocaine and heroin in waste water plants: A 1-year study in the city of Florence, Italy. *Forensic Sci Int*. 2009;189:88–92.
22. Davaalkham D, Ojima T, Wiersma S. Administration of hepatitis B vaccine in winter as a significant predictor of the poor effectiveness of vaccination in rural Mongolia: evidence from a nationwide survey. *J Epidemiol Community Health*. 2007;61(7):578-584
23. Cooke GS, Andrieux-Meyer I, Applegate TL. Accelerating the elimination of viral hepatitis: A Lancet Gastroenterology & Hepatology Commission. *Lancet Gastroenterol Hepatol*. 2019;4:135-184