5-Years Prevalence Study of HBV and HCV infections in Babylon Province: Forensic Helping Data

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Abstract

HBV and HCV infections are serious global health care problem because they may end with chronic hepatitis, cirrhosis, and hepatocellular carcinoma. HBV infection results in approximately 2 billion human infections while HCV approximately 160 million individuals. Raw database were collected from General health department at Babylon Health directorate for 715505 investigated person during a period from Jan. 2015 to Dec. 2019. Blood samples was drawn in Gel tube from suspects and centrifuged to separate the serum. Serum submitted for investigation of HbsAg and HCV Ab by both rapid immunochromatographic test and ELISA test. Actually the database taken from Babylon Health directorate and the results analysis depends upon dividing of data records from four health sectors, blood bank record lab, health care checking lab, pre-surgery checking, Marriage lab, thalassemia lab, Hemodialysis lab Prisoner and foreigners lab. The results revealed that , total positive cases were 4284 and 2260 for "HBV and HCV" respectively. The highest no. of cases for both "HBV and HCV" were recorded in 2018 (976 and 467) and (961 and 557) for "HBV and HCV" respectively. The incidence rate of "HBV and HCV" were varies worldwide. The results revealed that the occurrence rate (Mean ± SD) of "HBV" was (0.627±0.134) while for HCV was (0.327±0.084). The results revealed that, there is no defined month or semester for high rate infections. The high prevalence percentage were showed for prisoner-foreigner category (48.53 and 45.95 for HBV and HCV respectively) followed by surgery (22.66 and 19.03 for HBV and HCV respectively), blood bank (14.03 and 13.95 for HBV and HCV respectively) and in married (7.79 and 3.92 for HBV and HCV respectively. The current study conclude the high prevalence percentage of HBV (duplicate) than HCV with no seasonality of occurrence and the Prisoners and foreigners, Surgery, blood donor and hemodialysis were mostly involved with HBV and HCV infection.

Keywords: *HBV, HCV, Healthcare worker, HBV vaccine*

Introduction

Hepatitis is" the term used to describe inflammation of the liver. It's usually the result of viral or damage" . The hepatitis B virus (HBV) is a major global public health problem, affecting more than 2 billion people worldwide [1]. HBV and HCV infection results in approximately 2 billion and 160 million human infections respectively [2]. HCV super infection in patients with chronic HBV infection was the most common clinical features of coinfection in Asia–Pacific countries[3]. The chronically infected persons are at high risk of death from cirrhosis of the liver and liver cancer, diseases that kill about 1 million persons each year'[4]. It is assessed that more than 240 million people are recurrently infected with "HBV" and, therefore, are at risk for the development of cirrhosis, hepatic decompensating, and hepatocellular carcinoma (HCC)[5]. HCV disease advances to chronicity in 70% of cases, a condition that may prompt liver cirrhosis and hepatocellular carcinoma [6,7]. As per a WHO report, 130-150 million individuals are incessantly tainted with HCV. HCV the study of disease transmission shows impressive territorial differences[8]. There is no antibody to restrict the dispersion of HCV

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contamination while all medical services laborers ought to be considered for HBV immunization and ought to carefully apply the general prophylactic measures to forestall introduction to HBV and HCV.There is a need to calculate the liability of chronic "HCV" infection at the state level [5,9]. The study aims to study the prevalence rate of HBV and HCV infections for last 5 years (2015-2019) in Babylon Province.

Materials and Methods

Samples:

Raw database were collected from General health department at Babylon Health directorate for 715505 investigated person during a period from Jan. 2015 to Dec. 2019.

Specimens:

Blood samples was drawn in Gel tube from suspects and centrifuged to separate the serum.Serum submitted for investigation of HbsAg and HCV Ab by both rapid immunochromatographic test and ELISA test.

Results

The present study was showed to see the distribution & incidence rate of "HBV" and "HCV" infection among screened patients in Babylon province for past 5 years (January 2015 to December 2019). Actually the database taken from Babylon Health directorate and the results analysis depends upon dividing of data records from four health sectors, blood bank record lab, health care checking lab, pre-surgery checking, Marriage lab, thalassemia lab, Hemodialysis lab Prisoner and foreigners lab. Total of (715505) cases were investigated for HBV and HCV using rapid test and ELISA assays to confirm infections (Figure 1). The results revealed that , total positive cases were 4284 and 2260 for HBV and HCV respectively. The highest no. of cases for both HBV and HCV were recorded in 2018 (976 and 467) and (961 and 557) for HBV and HCV respectively. The incidence rate of HBV and HCV were varies worldwide. Our results revealed that the incidence rate (Mean ± SD) of HBV was (0.627±0.134) while for HCV was (0.327±0.084) (Table 1). Concern the categories from which infections were recorded, the results revealed that Prisoners and foreigners (48.53%, 45.95%), Surgery (22.66%, 19.03%), blood donor (14.03%, 13.95%) and hemodialysis (1.27%, 11.63%) for HBV and HCV respectively (Table 2). Concern the seasonality or weather relationship with HBV and HCV infections the results showed that there is no association between sessions and infections (figure 2). HVB vaccination were displayed in table (3).

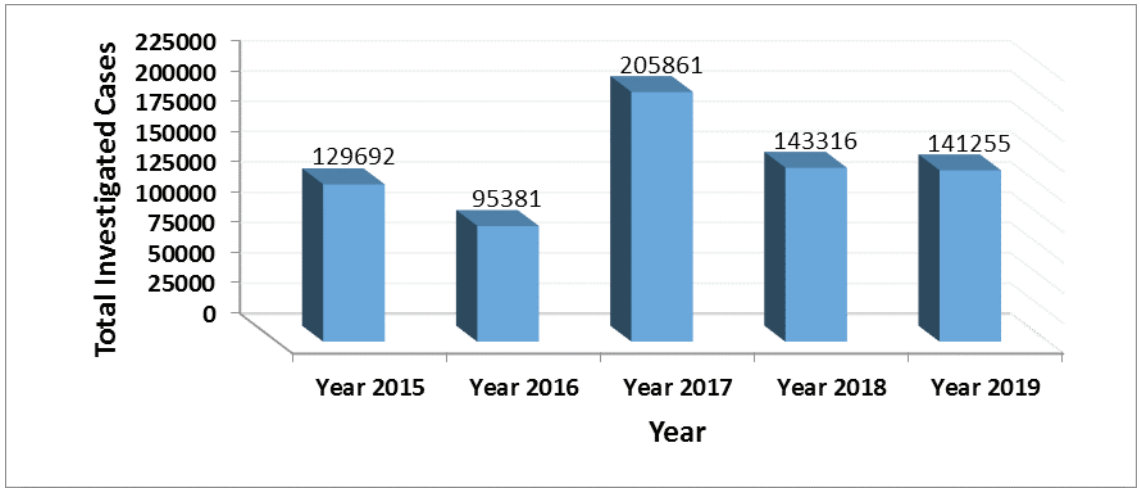


Figure (1): Total Cases of HBV and HCV infections in Babylon Province (2015-2019)

Table (1): Distribution of incidence % of HBV and HCV infections in Babylon Province (2015-2019).

Year	Tested	HBV cases	HBV %	HCV cases	HCV %
2015	129692	790	0.609	534	0.412
2016	95381	721	0.756	288	0.302
2017	205861	836	0.406	414	0.201
2018	143316	976	0.681	467	0.326
2019	141255	961	0.680	557	0.394
Total	715505	4284	Mean±SD 0.627±0.134	2260	Mean±SD 0.327±0.084

Table (2): Distribution of HBV and HCV infections cases among categories in Babylon province (2015-2019).

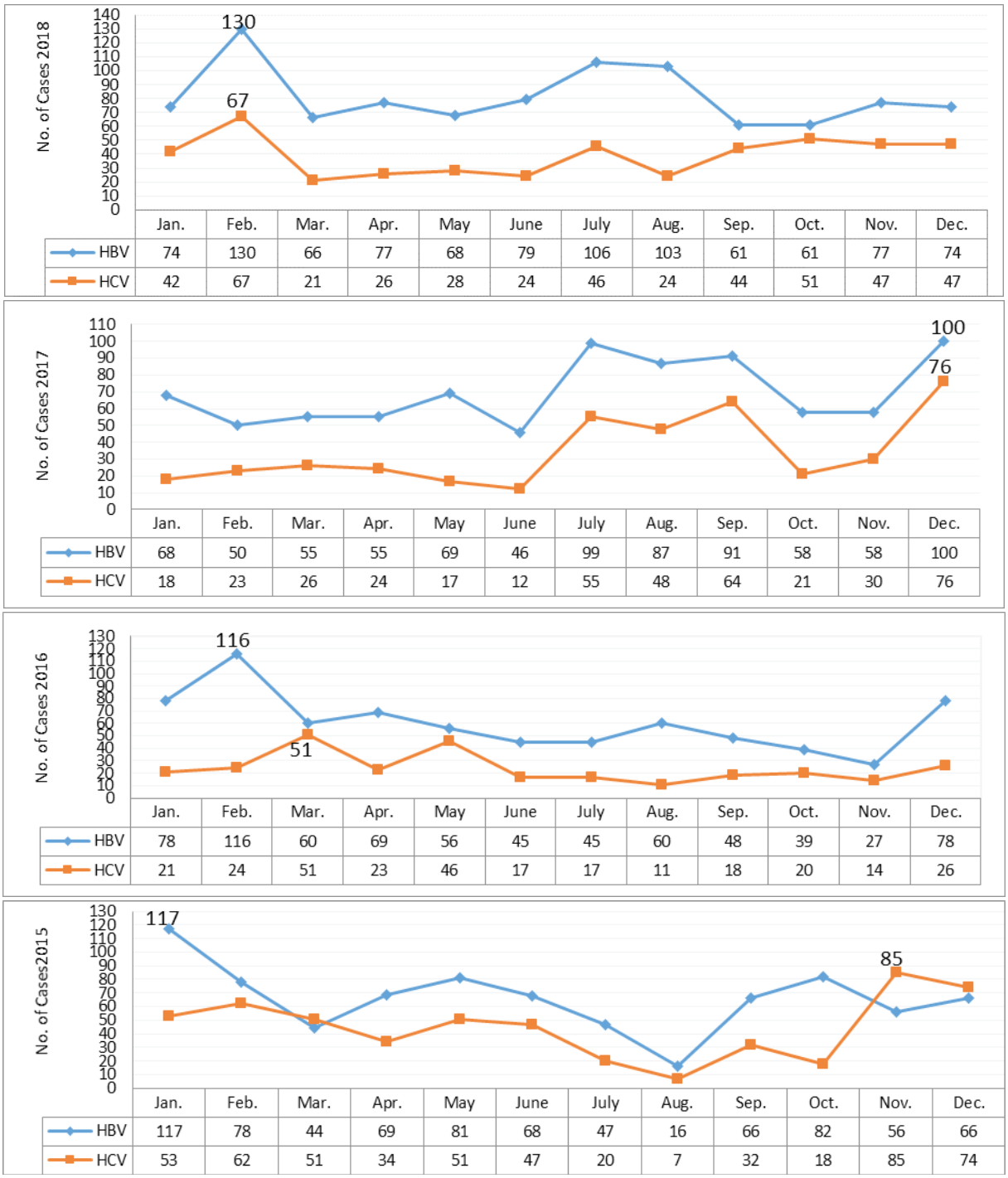
Categories	Total (2015-2019)			
	HBV	%	HCV	%
Blood Bank	596	14.03	313	13.95
Healthcare Worker	35	0.82	26	1.16
Contacting	178	4.19	43	1.92
Surgery	963	22.66	427	19.03
Married	331	7.79	88	3.92
Thalassemia	30	0.71	55	2.45
Hemodialysis	54	1.27	261	11.63
Prisoner and Foreigner	2062	48.53	1031	45.95
Total	4249	100	2244	100

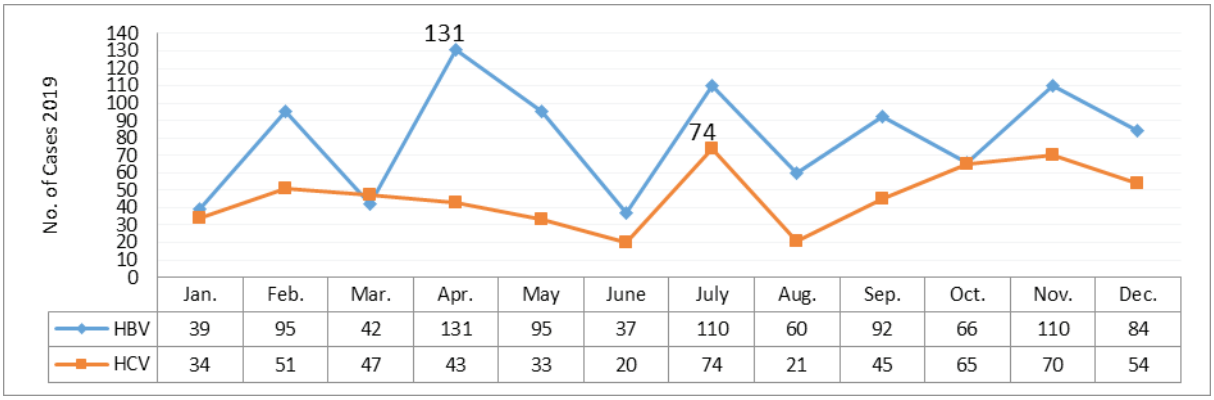
Table (3): HBV vaccine distribution in Babylon province (2015-2019)

Year	HBV vaccine				Total
	first Dose	second Dose	Third Dose	Child Dose	
2015	11711	9184	13805	36748	71448

Cont... **Table (3): HBV vaccine distribution in Babylon province (2015-2019)**

2016	14436	6722	19642	38466	79266
2017	12863	6519	9346	39520	68248
2018	11672	6290	8028	37529	63519
2019	12996	5598	4827	38778	62199





	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
HBV	39	95	42	131	95	37	110	60	92	66	110	84
HCV	34	51	47	43	33	20	74	21	45	65	70	54

Figure (2): Distribution of HBV and HCV infections in Babylon Province according to month at 2015-2019.

Discussion

It seem that our results were in accordance with some of the Iraqi studies like [2] who found that out of 4851 patients, (1.79%) were positive for hepatitis B and (0.14%) were positive for hepatitis C. Salehi-Vaziri et al., (2016)[1] stated that, in several areas of the world, the occurrence of "HBV" infection diverse from 0.1 to 20%. Our results in accordance with [10] who found that the incidence rate of HBV was double of HCV. Predominance of HCV disease In 2015, 71 million people were living with ceaseless HCV contamination. Contrasted and HBV, the commonness of HCV contamination is lower, however more heterogeneously conveyed, with contrasts across and inside WHO districts and nations. Spread through breaks in disease control practices or infusion drug use may clarify this example. In general, in 2015, the worldwide predominance of HCV contamination was 1.0%. The Eastern Mediterranean Area had the most noteworthy pervasiveness (2.3%) trailed by the European District (1.5%).In 2015, viral hepatitis led to 1.34 million deaths. The results revealed that the HBV frequency is double or more than HCV. Many studies were in accordance with our results whose show the high percentage of HBV versus HCV among blood bank donors[11-15].

The results of (figure 2) revealed that, there is no defined month or semester for high rate infections. This is may be due to fact that , both HBV and HCV not respiratory virus (respiratory viruses are highly spread viruses especially during winter semester), not food-borne diseases and their transmission may be limited percutaneous and per mucosal or blood transfusion, sexual transmission, and mother-to-child transmission [16-21]. (Salehi-Vaziri et al., 2016) [1] found that, "HBV" is really spreadable and comparatively easy to convey from infected persons to others through some ways like birth, unprotected sex, blood transfusion, and also sharing needles. Jansen et al., (2015) [10] found that, the incidence of HBV showed no trend over time, did not differ between study participants living in rural or urban area. Concerning the prevalence or registry of HBV and HCV positive persons among categorized patients were displayed in table (2).

The high prevalence percentage were showed for prisoner-foreigner category (48.53 and 45.95 for HBV and HCV respectively) followed by surgery (22.66 and 19.03 for HBV and HCV respectively), blood bank (14.03 and 13.95 for HBV and HCV respectively) and in married (7.79 and 3.92 for HBV and HCV respectively). Though most of HBV contaminations among detained people are obtained in the network, transmission has been distinguished in jail, and rate rates have extended from 0.8 to 3.8% every year [18,19]. Our results was in agreement with many studies who is establish high ratio of HBV and HCV among prisoners like those documented in Iran [24,25], Sweden [26] and France [27]. Elective surgeries were recorded as good monitoring of HBV and HCV surveillance due to fact that the person need to be checked for HBV, HCV and HIV prior to surgery especially in delivery [28], eye surgery [29,30], oral and maxillofacial [31] and dental surgeries [32-34].

Conclusion

The current study conclude the high prevalence percentage of HBV (duplicate) than HCV with no seasonality of occurrence and the Prisoners and

foreigners, Surgery, blood donor and hemodialysis were mostly involved with HBV and HCV infection.

Conflict of Interest: we declare that there is conflict of interest

Ethical Approval: the research approved by scientific and ethical committee at our department

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