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Prevalence of Viral hepatitis by testing pre-marriage men in Samara city during 2023.

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الكشف عن التهاب الكبد الفيروسي بفحص الرجال قبل الزواج في مدينة السمارة خلال عام ٢٠٢٣.

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الخلاصة

واحدة من أهم الاهتمامات في مجال طب نقل الدم هي سلامة منتجات الدم. وكشفت دراسة سابقة أجريت في المختبر المركزي بمدينة سامراء بالعراق، أن فيروس التهاب الكبد الوبائي منتشر على نطاق واسع. هدفت الدراسة إلى تحديد تواتر الأجسام المضادة لـ HBs وAnti-HBs في عينات مصل المتبرعين بالدم الأصحاء الذين كانت نتيجة اختبارهم سلبية لكل من HBsAg وanti-HCV.طُرق العمل: تم اختبار ٤٤٠ مائة رجل قبل الزواج لالتهاب الكبد الفيروسي. تم أخذ عينات الدم من جميع المتطوعين وكان هناك رجال أصحاء تم اختبارهم لكل من HBsAg ومضاد HCV. النتائج: ٣٢ (٧.٣٪) من ٤٤٠ عينة دم كانت نتيجة اختبارها سلبية لـ HBsAg كانت إيجابية أيضًا لمضادات HBc. تم الكشف عن الأجسام المضادة لـ HBs في ٣ (١.٤٧٪) من ١٣ فردًا إيجابيًا لـ HBc.الاستنتاج: تم اكتشاف أن معدل تكرار الإصابة بالتهاب الكبد C كان منخفضًا بشكل ملحوظ مقارنة بـ HBsAg.الكلمات المفتاحية: انتشار، التهاب الكبد الفيروسي، التهاب الكبد ب، التهاب الكبد ج، سامراء، العراق.

Abstract

One of the most important concerns in the field of transfusion medicine is blood product safety. A prior study conducted in the Central Laboratory in Samara, Iraq, revealed that the hepatitis virus was widespread . The study **aimed** to determine the frequency of anti-HBc and anti-HBs antibodies in serum samples of healthy blood donors that tested negative for both HBsAg and anti-HCV. **Methods;** 440 hundred men was tested before pre-marriage for viral hepatitis. Blood samples were taken from all volunteers and there were healthy men that tested for both HBsAg and anti-HCV. **Results**; 32 (7.3%) of the 440 blood samples that tested negative for HBsAg also tested positive for anti-HBc. Anti-HBs was detected in 3 (1.47%) of the 13 anti-HBc positive individuals. **Conclusion**: It was found that the frequency of hepatitis C was remarkably low as compare with HBsAg. ***Key words :*** Prevalence, Viral Hepatitis, hepatitis B, hepatitis C, Samara, Iraq.

Introduction

Viral hepatitis is a cluster of infectious diseases that affects hundreds of millions of people worldwide, causing severe ailment and death from acute hepatitis infection, liver cancer and liver cirrhosis, globally an expected 350 million people are chronically infected with HBV while 185 million are chronic transporters of HCV (Mohamed *et al*, 2016; Mahmood *et al*, 2001).Routine and regular screening of all blood donors and pre-marriage men is required to stop the spread of viral diseases. All given blood must be serologically screened for

HBV, HCV, and HIV, to prevent transmission viral diseases, as usually done in all Iraqi hospital, (Al-Zobaei, 2014).A program to prevent and manage viral hepatitis was initiated in Iraq in the early 1970s. Iraq has an intermediate prevalence of type B hepatitis (3.3%), according to several investigations that were carried out to determine the prevalence of the disease in the nation, (Mohammed , L *et al* , 2023; Ataallah TM, *et al*, 2011). HBV and HCV infections may lead to liver disease (Hepatitis) that progresses from liver damage to liver failure, and cirrhosis, (Rodenas JG, *et al*, 2006; Nawar Al_Salih.2020).HBV is very contagious and spreads quickly from infected people to others through blood transfusions, birth, unprotected sex, and sharing needles, among other methods, (Raof, A, 2015; Al-Zobaei, M, 2014).Numerous international epidemiological investigations have shown that there are significant regional variations in HCV prevalence from 1 to 15 %., (Anwar MS, *et al*, 2011; Mahmood A, *et al*, 2001)Several studies were done in Iraq to investigate the prevalence of viral hepatitis in different area in Iraq. Over the past ten years, the number of hepatitis cases among Iraqis has increased. Iraq is regarded as having a low endemic rate for HBV and HCV in comparison to its neighbors, (ALHaj N. *et al*, 2019; Brooks GF, *et al*, 2007)Major public health concern due to their serious complications are hepatitis B and hepatitis C virus infections on one hand, and intra familial spread is the major route for transmission on the other hand (Kyi *et al*, 2011).**The aim** of this study was to examine the prevalence of viral hepatitis among men during pre-marriage blood testing in Samara, city.

Patients and methods

Four hundred and forty normal apparently healthy men were participated in the present. Pre-marriage tests were administering to the central public health laboratory in this province of the Samara during 2023.Five ml of blood sample of venous blood were taken into a sterile, dry tube. Enzyme Linked Immunosorbant Assay (ELISA) test was used to detect HBV and HCV in blood donors. A microparticle-enzyme immunoassay (EIA) test (Abbott Architect i2000 SR Combo diagnostic kits, USA) is used to detect positive HBV and HCV results. The same serum samples were used to retest samples with positive test findings for repeated reactivity. Reagent samples that were repeated were regarded as positive, (**Martelli CM**, *et al*, 1999).A positive immunoblot test result or the presence of HCV RNA serve as further indicators of infections. For patient screening, a third-generation anti-HCV-ELISA that has been improvised and is very sensitive is frequently employed, (Kesli R, 2011)The subjects were tested for hepatitis B in accordance with WHO standard testing procedures. In brief, following two positive results from HBsAg serological testing, (**WHO 2016**).

Results

From total 440 subjects, only 32 subjects were found to have positive for viral hepatitis, (7.3%). In Table 1 the highest percentage were in July (11.8%), followed by August, (8.5%). However, the lowest percent was in December, (3.5%).**Table 1** shows the number and percentage of viral hepatitis in 440 men after pre-marriage testing**.**

Year 2023 months	Total	Number of +	%
July	85	10	11.8
August	82	7	8.5
September	77	5	6.5
October	73	4	5.5
November	66	4	6.1
December	57	2	3.5
Total	440	32	7.3

Table 2 shows the distribution of 32 patients with viral hepatitis into HCV and HBV. 28 of patients have HBV viral hepatitis, (88%) and only four patients infected with HCV.

Table 2 Classification of 32 patients with viral hepatitis according time of year

Year 2023 months	HCV number	%	HBV number	HBV %
July	2	2.4	8	11.8
August	1	1.2	6	7.3
September	--	---	5	6.5
October	1		3	4.1
November	-----	--	4	6.1
December	----	---	2	3.5

Total	**4**	**0.9**	**28**	**6.4**

Discussion

Defining the prevalence of acute hepatitis B is mainly restricted by its asymptomatic clinical course and unrecorded patients who attend the private clinic, (Mohammed , L., *et al*, 2023).

The present study found a 7.3% of 440 pre-marriage men testing for viral hepatitis was positive result. Also, the highest percentage of viral infection was HBV, (88%).

Previous studies found that a low prevalence rate of hepatitis in the local population, because the presence of acute hepatitis B is mainly restricted by its asymptomatic clinical course and unrecorded patients who attend the private clinic, (Turky M , *et al*, 2011; Alhilfi H, 2015).

The present study found a 0.9% of viral hepatitis patients infected with HCV. Previous studies had shown that the rates of HCV infection among normal apparently healthy blood donors range from 1% to 19%, (Al-Zobaei, M, 2014; Al-Rubaye A, 2016).

Routine and regular screening of all blood donors and pre-marriage men is required to stop the spread of viral diseases, (Safi, S, *et al*, 2011). All given blood must be serologically screened for HBV, HCV, and HIV, to prevent transmission viral diseases, as usually done in all Iraqi hospital, (Al-juboury A, *et al*, 2010; Hussein NR , 2017; **Cunha** L, *et al*, 2007).

One of the important restrictions in the present study is that only HBsAg was used in diagnosis of suspected patients of acute hepatitis B infection and the classification of acute hepatitis B needs the detection of Anti-HBcIgM and Anti-HBsAb to distinguish acute from chronic patients.

Conclusion: The present study found that a 0.9% of viral hepatitis patients infected with HCV in apparently normal healthy person at pre-marriage testing. The highest prevalence of viral hepatitis rate was found at July (11.8%)

Recommendations

1. All serological diagnosed patients with hepatitis B and C should be confirmed molecularly to establishing the best of choice of drug (HCV) and prevention.
2. Health education should be necessary for general population, especially for patients with HBV and HCV and increasing the awareness about the dangers of the disease.

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