

Prevalence of Hepatitis B and C Among Normal Individuals in Tripoli/Libya

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الخلاصة

تم انجاز هذه الدراسة المنظورة لتحديد انتشار امراض التهاب الكبد الفيروسي من النوعين (B,C) وذلك من خلال عدد من الاشخاص الاعتياديين ومن الطبقات الاجتماعية والثقافية المتنوعة في العاصمة الليبية (طرابلس) والتي تشهد كونها احدى المدن المزدهمة بالسكان. تم فحص 2492 عينة دم اخذت من نفس هذا العدد من الاشخاص وقد وجد بان انتشار التهاب الكبد الفيروسي من النوع (B) وذلك بنسبة 2.28% منهم بينما كانت النسبة لالتهاب الكبد الفيروسي من النوع (C) حدود 5.04%. وجد بان انتشار التهاب الكبد الفيروسي (HBV) يتزايد مع تزايد العمر، ففي معدل الاعمار ما بين (50-80) فان النسبة تراوحت بحدود 3.07% بالمقارنة مع نسبة 2.19% من الاعمار الشابة والتي تقع ما بين (15-22). اظهرت النتائج انتشار المرض بنسبة تزيد قليلا في الذكور والذين اظهروا ميلا اعلى للإصابة من الاناث واللواتي اظهرن نسبة 1.89% فقط طبقا لنتائج البحث الحالي.

Abstract:

A prospective study was done to determine the prevalence of hepatitis B and C infection among normal individuals of different social and cultural categories in capital of Libya (Tripoli) which is the most crowded city in Libya.

In all individuals (2492) blood samples were examined. It has been found that prevalence of hepatitis B was (2.28%) and hepatitis C was (0.04%).

HBV prevalence increases with age. In elderly populations (50-80 years) the prevalence of HBV was (3.07%) compared to (2.19%) in young individuals (15-22 years). Males also were slightly more prone to HBV (2.27%) than females (1.89%) according to our results.

Introduction:

Viral hepatitis is a systemic disease primarily involving the liver. The etiologic agent in hepatitis B is hepatitis B virus (HBV) and in hepatitis C is

hepatitis C virus (HCV). HBV and HCV infections have been reported all over the world.

Hepatitis B virus infection has long been a major cause of morbidity and mortality worldwide. In 1996, it was estimated by the WHO to cause one million deaths annually^[1]. It can cause liver diseases such as liver cirrhosis and hepatocellular carcinoma (HCC). A study in Japan showed that 25% of HCC patients were positive for hepatitis B surface antigen (Hbs Ag)^[2].

The prevalence of chronic HBV infection varies greatly in different parts of the world, it is classified geographically, from high (>8%), intermediate (2-7%) to low (<2%) prevalence^[3]. According to this classification, prevalence in Libya is intermediate (2-7 %). HBV is highly prevalent in regions with high populations such as south East Asia, China and Sub-Saharan Africa.

HBV is spread through contact with infected body fluids and the only natural host is human. Blood is the most common route for transmission, but other body fluids have also been implicated, including semen and saliva^[4,5].

The routes of transmission of HBV also vary according to the endemicity of HBV. Parenteral transmissions that include injection drug use, transfusion, dialysis, acupuncture, working in tattooing remain as important routes of transmission^[6]. Obvious sources of infection include HBV contaminated blood and contaminated surgical instruments. People at high risk of infection include those with frequent transfusions or hemodialysis, physicians, dentists, nurses and other health care workers. The carriers of HBV infection also provide a source of viral transmission to susceptible individuals^[7]. Hepatitis C is the main cause of liver cirrhosis and HCC, both of them are fatal diseases. WHO estimates that there are at least 21.3 million hepatitis (HCV) carriers in Mediterranean countries which are close to the number in Europe and America^[8]. WHO also has declared that Egypt contains the highest prevalence of hepatitis C in the world. The national prevalence rate of HCV has been estimated to be 10-13%. The major route of exposure in this region appears to be due to injection therapy and inadequate infection control practices^[9].

In Peshawar it was registered that the major risk factor of HCV transmission was drug abuse and sexual partners^[10]. The prevalence of HCV was 39.5% in patients with HCC in Saudi Arabia^[11]. In Iraq, anti HCV was reported in 42.8% in patients with chronic viral hepatitis^[12].

The present research aimed to determine the prevalence of hepatitis B virus (HBV) and hepatitis C virus (HCV) among young and elderly individuals in Tripoli and the differences in exposure to HBV and HCV between males and females.

Materials and Method:

2492 healthy individuals of both sexes are randomly selected from different social and cultural categories. The age ranges were from (15-22) and from (50-80) years.

Diagnosis of hepatitis B and C was made by taking blood samples from the individuals. Samples collected were tested by using enzyme linked immunsorbent assay (ELISA) technology.

Results:

All results are illustrated in tables (1 and 2) and in figures (1and2).

The general percentage of the positive results for HBs Ag in our study was 2.28% and 0 % for HCV. The total number was 2492 and the number of positive results for HBV was 57(i.e. 2.28%).

Serum samples from 2232 young individuals of both sexes with age range from 15- 22 years were tested for HBV and HCV. The percentage of exposure to HBV as indicated by positive result was (2.19%) and (0.04%) was only the positive results of HCV.

Another 260 blood samples of elderly individuals of both sexes with age range from (50-80) years were tested for both HBV and HCV. The percentage of positive results as shown in table-1 and figure-1 was (3.07%) which was more than the young people, but it was 0% for HCV.

Age group in Year	NO. of samples	% HBV	% HCV
15-22	2232	2.19	0.04
50-80	260	3.07	00

Table-1: prevalence of HBV and HCV between young and old populations

Prevalence of HBV Prevalence

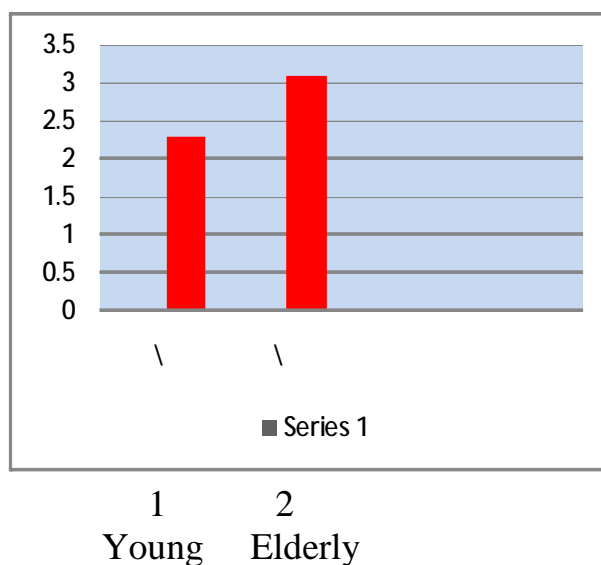


Figure-1: Prevalence of HBV and HCV among different age groups

Regarding the differences between the distribution of HBV and HCV among males and females, 1174 male samples and 1318 female samples were tested. The results are shown in table-2 and figure-2. The prevalence of HBV in male was (2.72%) which was more than female (1.89%), while the percentage of exposure for HCV in both sexes was (0%).

Sex	No. of samples	%HBV	%HCV
Male	1174	2.72	0%
Female	1318	1.89	0%

Table 2: Differences in exposure to HBV and HCV in males and female

Percentage of Prevalence of HBV

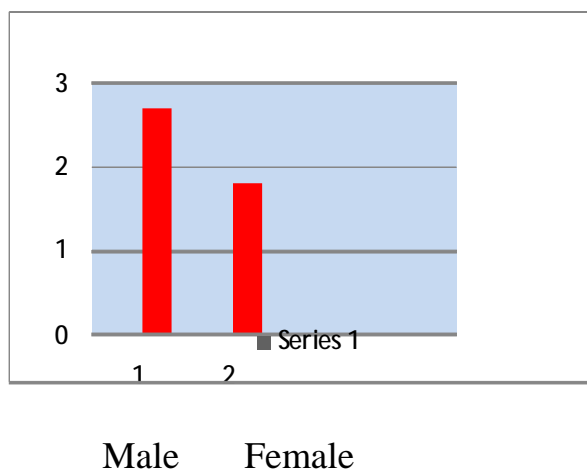


Figure-2: Prevalence of HBV and HCV among different sex.

Discussion:

The present results show that the prevalence of HBV was 2.28%, this result is agree with the WHO map for prevalence of HBV in the world in 2002, in which the percentage in Libya is intermediate(2-7%).

The percentage of HBV in young healthy individuals was 2.19% which is less than that of elderly people (3.07%). Our findings are consistent with the study carried in Lebanon^[13].

Regarding the sex, our study shows that males are more prone to HBV than female, this support results in studies carried in Lebanon and other in Benghazi^[14].

The present findings indicated that there was no prevalence of HCV among healthy individuals in Tripoli. The result is different from previous studies in Libya, in which the prevalence was 16.6% and 1.6%^[14]. The prevalence in Tripoli (crowded city) is much more less than other countries such as Egypt which was 13.3% and in Yemen in which the prevalence among healthy populations was 4.2 %^[15]. The negative result of HCV in Tripoli may be due to preventive strategies that are available in the country.

The present results cannot be compared with other previous studies carried in Libya or other countries in which the screening was between patients with liver diseases or patients in hospitals rather than healthy people.

Conclusion:

The present research indicated that the prevalence of HBV is intermediate in comparison with other countries. The males are more susceptible to the virus than female and the old people are more susceptible than young people. Regarding hepatitis C, we can conclude that, in the period of study, this viral disease is not prevalent in Tripoli.

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