Libyan International Medical University
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Serologic Evaluations of Hepatitis B and C Among Nephrology Center of Benghazi

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This report was made for the purpose of fulfilling the request made by the BMS faculty to write a scientific report regarding a related topic to our current block, the report is a summary of a compilation of various researches.

Abstract:
Hepatitis B (HBV) and C (HCV) viruses are the most important infections transmitted within the dialysis units by any of which means ,The present study was undertaken to estimate the prevalence of HBV and HCV among hemodialysis patient ,After informing patients retrospective study was done on them between 11th February and 22nd August 2009 a number of 50 patients attending hemodialysis unites where applied to serological testes for the presence of HBV and HCV markers by the third generation of ELISA automated system. Serological investigations show 25 (50%) patients were HCV seropositive ,while 15 (30%) patients had HBV infection .HBV infection is less frequent than HCV, Viral hepatitis infections is a major problem which can be transmitted during the sessions of dialysis if safety recommended protocols were poorly restricted, this report is made in order to evaluate the prevalence and risk related factors of HCV and HBV in patients receiving regular dialysis in nephrology center of Benghazi.[1]

Introduction:

Viral hepatitis is one of the major health problems in the world ,approximately 3% which represents about 175 million people are infected with HCV infections ,also the prevalence of HBV is 10% accounting for 400 million individuals globally ,in a previous study it has been estimated that 120,00 to 150,000 was a carrier for HBsAg in Libya 2.2% of the total populations in Libya. Hepatitis B is DNA virus belongs to hepadnavirus a potentially life-threatening liver infection caused by the hepatitis B virus. It is a major global health problem. It can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer, vaccine against hepatitis B has been available since 1982.4The vaccine is 95% effective in preventing infection and the development of chronic disease and liver cancer due to hepatitis B ,in the other hand Hepatitis C virus (HCV) is RNA virus causes both acute and chronic infection. Acute HCV infection is usually asymptomatic, and is only very rarely associated with life-threatening disease. About 15–45% of infected persons spontaneously clear the virus within 6 months of infection without any treatment. Regarding HCV prevalence in Libya ,the rate was 5-10% of the whole country .Hemodialysis is a procedure done on patients with acute or chronic renal failure in order to remove toxins ,metabolic wastes by circulating the blood externally through hemodialyzer (artificial kidney , during the procedure or patients may expose to theses viral infections.[3]

Methods & Materials:

50 HD who had been receiving hemodialysis regularly (rang from 8 to 12) months were enrolled in this study ,all patients , 25 were men ,25 were women , with an average age of 41. HBV markers were measured in these patients and in healthy controls by third generation of ELISA method in order to compare the incidence of HBV infection in hemodialysis patients versus normal healthy people .All patients were then divided into three groups ,Patients have seropositive for HBV markers (positive HBsAg , Anti HBc N=15)Patients have seropositive for HCV markers (positive Anti-HCV N = 25)Patients seronegative for both Anti-HCV, HBsAg.

Laboratory Data:

Serum HBsAg . Anti-HCV ,were measured with an ELISA automated device (PRIO) .biochemical investigations were measured by (spectrophotometer-5010) including ALT

AST, ALP, also NO of blood transfusions for each patients .All investigations were carried out in the laboratory of AL-KWAIFIA hospital .

Results :

All of the 50 patients were screened for serologic testes and monitored for a consequent 6 months and this is in order to capture any seroconversion during their dialysis session

HD patients (n=50)	HBsAg	Anti-HCV
15	+	-
25	-	+
10	-	-

Discussion

Our study shows a three seroconversion cases during dialysis sessions and this is due to not restricting to the safety protocols recommended by world health organization one **.** Another study was carried out in 22 dialysis centers in Saudi Arabia involving 1147 patients with mean age 43.4±15.3 years ,580,576 was the no number of males and females respectively. Overall prevalence rate of positive Anti-HCV antibodies was (68%)with a range from as low as 14.5 % to as high as 94.7%A positive relation correlations was found between anti-HCV positivity and long duration dialysis sessions along with blood transfusions, interestingly 62.6% of the patients who had not had blood transfusion had anti-HCV antibodies.[2] Other study was done in IRAN which is identical to our purpose the data was collected in the ministry of health for statistical analysis prevalence incidence were calculated ,the prevalence of HBsAg ,Anti-HCV were decreased from 3.8 % and 14.4 % in 1990 to 2,6 % and 4.5 % in 2006 respectively.[1] In addition to a study done on HD patients whose randomly chosen from 308 dialysis facilities in France ,Germany ,Italy ,Spain ,united kingdom, Japan ,united states ,78.1 % of the facilities had a zero rate in seroconversion per 100 patients yearly for HBV in infections the higher prevalence of HBV was detected in France ,Germany ,Italy and lower was in Japan ,united kingdom which had a rate of seroconversion from 0 to 5 % with a variations.[4]

Conclusion :

Concerning HBV infections ,the insertion of HBV vaccine is ultimately decreases the statistic no of infections and significantly optimize the control of the HBV infections Regarding HCV infections prevention, 2 approaches may be recommended: the first is decrease of duration of the hemodialysis period by possible early transplantation of suitable patients. The next is a strictly enforced isolation policy for HCV-positive patients, which may play a role in limiting HCV transmission in HD units, and universal precaution in dialysis units should be under constant close surveillance. The introduction of HBV vaccination ,isolation of HBV seropositive patients and the use of dedicated dialysis machines and regular procedure for controlling the HBV infections dramatically reduces the spread of HBV infections among HD patients The prevalence of HCV infections among HD is high and varies between countries (2% to 60%) and even between dialysis units within a single country ,Dual infections more aggressive liver disease there are very few reports on the prevalence of such dual infections in hemodialysis patients.

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