







<i>University of Baghdad</i>				
College Name	medicine			
Department	Microbiology			
Full name as written in passport	MOHAMMAD ABASS AHMED AL-KARKHY			
e-mail				
Career	 Assistant Lecturer	 Lecturer	 Assistant Professor	 Professor
	 Master	 PhD		
Thesis Title	IMMUNOLOGICAL AND VIROLOGICAL STUDY OF HEPATITIS G VIRUS COINFECTED WITH HEPATITIS C VIRUS IN HEMODIALYSIS PATIENTS			
Year	2013			
Abstract	<p><i>Background</i> Patients on maintenance hemodialysis are at increased risk of infection with parentally transmitted viral agents. In recent years a high prevalence of hepatitis G virus (HGV) infection among end stage renal diseases and chronic hemodialysis patients has been well documented. A part from other viral agents as hepatitis B virus (HBV) and hepatitis C virus infections (HCV), the risk of hepatitis is likely to extend to a newly identified group of viral hepatotropic agents belonging to the flaviviridae family and distantly related to HCV which can cause acute and chronic hepatitis. Data available to date; however, indicate that group of proinflammatory cytokines play as important role in pathogenesis of viral hepatitis. This study was done to asses the frequency of HGV exposure (ongoing and past infection), and study the possible risk factors of infection in hemodialysis patients compared to control group.</p> <p><i>Materials & Methods:</i> A cross sectional involved fifty patients with chronic renal failure who underwent hemodialysis for six months and above. Patients were currently attending hemodialysis department of Baghdad teaching hospital during the period of October 2011 to January 2012. Their ages ranged from 15 to 72 years with mean \pmSD was equal to 48.52 ± 14.77 years. Compared to Forty one healthy blood donors who were attending Iraqi blood bank center aged and sex matched as a control group. III</p>			

The practical part of this study performs the followings:

1- Detection of HGV immunoglobulin M and G (IgM and IgG) in patients' serum using enzyme linked immunosorbant assay (ELISA).

2- Detection of HGV-RNA using reverse transcriptase-polymerase chain reaction (RT-PCR) assay.

3- Serum concentration of interleukine one alpha (IL1 α) and interleukine 10 (IL10) using immunoassay.

4- Other tests: include hematological, biochemical and viral screening tests which were done routinely in dialysis unit for patient assessment.

Results

HGV-IgM was detected in 26 out of 50 patients tested (52%) compared to 11 out of 41 (26.83%) apparently healthy blood donors whom belong to control group. Statistical significant difference was clearly noticed (P-value <0.05). The risk of HGV infection in patients on maintenance hemodialysis was 2.95 times.

HGV-IgG was detected in 36 out of 50 patients (72%) compared to 6 out of 41 (14%) of apparently healthy blood donors. Statistical significant difference was clearly noticed (P-value < 0.05).

HGV-RNA was detected in 16 (32%) among 50 patients on maintenance hemodialysis using RT-PCR, 9 out of 50 cases (18%) revealed HGV-RNA bands and gave a positive HGV-IgM with no statistical difference compared to control group. IV

All hemodialysis patients (100%) were proved to have HCV. Therefore; all HGV-IgM positive cases were infected with HCV.

Significant difference were observed between the history and numbers of blood pints intake among hemodialysis patients with positive HGV IgM compared to control (P-value <0.05). Eleven out of 26 (42%) cases gave a positive HGV-IgM who underwent hemodialysis for 6-12 months and 10 out of 26 (39%) HGV-IgM positive cases on maintenance hemodialysis for more than 2 years. Twenty two cases out of 50 (44%) had past surgical

history, 12 of them (24%) had HGV infection (p-value>0.05). Eight cases (30.8%) had elevated TSB mean \pm SD equal to (1.41 \pm 0.39), 3 cases (11.5%) had raised SAST with mean \pm SD equal to (43.63 \pm 27.02) and 5 (19.2%) of cases had elevated SALT with mean \pm SD equal to (43.88 \pm 29.7) P-value >0.05. Highly statistical significant difference was observed (P-value = 0.0001) among study cases with mean \pm SD of IL-1 α concentration (1.168 \pm 4.96) (pg/ml) compared to mean \pm SD of IL-1 α concentration (106.51 \pm 162.39) (pg/ml) among control group. No significant statistical difference was observed between IL-1 α level and HGV infection. Statistical significant difference was observed among the study cases with mean \pm SD of IL-10 concentration (131.9 \pm 91.8) (pg/ml) compared to mean \pm SD of IL-10 concentration (179.8 \pm 123.76) (pg/ml) among control group. No significant statistical difference was observed between IL10 level and HGV infection. v

Conclusions

The study results are consistent with previous studies which appear that patients on hemodialysis are at increased risk of HGV infection. HGV is very frequently associated to hepatitis C co-infection, and may be transmitted by blood transfusions but other than transfusion are possible. As well as a pronounced frequency of HGV infection among blood donors was found. The reciprocal relation between IL1 and IL10 acts as a counter regulatory mechanism to control the monokine overproduction induced by uremia.

Recommendation: further investigations are necessary to clarify the role of HGV infection in the development of liver disease in this clinical setting.