Detection of hepatitis c virus and its genotypes in apparently healthy individuals

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Hepatitis C virus is the predominant discriminated agent of non-A,non-B hepatitis worldwide, It cause: mild inapparent infection which progress to chronicity in the majority df cases.The virus is transmissible via blood transfusion as well as parentralroutes. The healthy carrier state may be exist, as there are HCV RNApositive individuals with normal liver function and minimal intrahepaticchanges.There is now an evidence that the screening of blood for HCVantibody lower the p, revalence rate ofHCV infection. Polymerase chainregtion PCR is sensitive and reliable method for detecting HCV RNA,specially during the early seronegative period. Genotyping and subtypingImay play a rule in evaluation of the clinical prognosis for long termpatient management and in the future will help in the vaccinationtechnology for prophylaxis.Therefore, this study was carried out to correlate between positiveHCV antibody among apparently healthy Egyptian individuals, thepresence of HCV RNA, the level of ALT and AST. We tried to identifythe predominant HCV genotypes and also, the presence ofHCVandHBV dual infection.This study was: comprised 201 apparently healthy individuals.who,were choosen randomly from Egyptian population applying to theICentral Blood Bank' in Mansoura for the health certificates to workabroad.They were 34 females and 167 males and all of them were adults., Venous blood samples were collected from them sera were, separated,tested for HCV antibody, HBsAg. Schistosoma antibodies, AST and ALTI -186- .Summary & Com:IrIsionlevels. Also, all the studied individuals were subjected to history takingincluding the most common risk factors for HCV infection.All 57 cases positive for HCV antibody as well as 18 randomlyselected cases of those who were negative HCV antibody, were tested forHCV RNA, by PCR technique.Twenty sera of positive HCV RNA cases, randomly selected, weresubjected to HCV genotyping and subtyping by INNO LiPA HCV II.In this study, it was found that the prevalence ofHCV antibody, bysecond generation of ELISA, was 28.4%, HBsAg was 4%, but non ofthem had both HCV antibody'and HBsAg.No significant differences were detected as regard sex, residence,site of practising shaving for males, history of interventions duringlabour for females, or history of blood transfusion, between positive andnegative HCV antibody as well as HCV RNA cases.There were statistically, significant differences between positive andnegative HCV antibody, also, between positive and negative HCV RNA: I for the old age group, those who had history ofiSchistosomiasis, thosewho had history of using glass syringes and those who had history ofdental maneuovres so, these

situations can be considered as the mostimportant risk factors for HCV infection.The prevalence of positive HCV antibody a,hd positive HCV RNAwere higher in those cases who had elevated and double elevated ASTlevels, but this was not statistically significant. There was statisticallysignificant difference as regard elevated ALT level between positive andnegative HCV antibody, as well as positive and negative HCV RNA.Also, individuals with elevated both AST and ALT had higherprevalence rate of positive both antibody and HCV RNA, than those whohad either elevated iASTALT or who had normal level of both enzymesand this was statistically significant. 'The prevalence ofHCV antibody and HCV RNA were high amongthose who were positive for Schistosoma antibodies, by IRA test, but thiswas statistically insignificant.The prevalence rate of positiveHCV RNA by RT PCR among thestudied group w~re 40%. The HCV ~A positive percentage among the,positive HCV antibody individuals were 49.1% and among the negativeI HCV antibody individuals were 11.1%.The sensitivity and specificity of ELISA (second generation) ifcompared with PCR were 93.3%, and 35.6% respectively.I IIThe predominant genotypes within the studied group were genotype4, different genotype 4 subtypes, and mixed type 4a with type I a.from this study we concluded that:• The prevalence ofHCV antibody was 28.4% by using (ELISA-2).• The prevalence of HBsAg were 4%, so that the prevalence ofHBVinfection is much lower than that onICV infection.• There was no dual infection of HBV and HCV among the studiedgroup.• Age, history of Schistosomiosis, history of using glass syringes, andhistory of dental maneuovres were important risk factors for HCVinfection.• HCV RNA were' 40% among the studied group with perecentage49.1% out of positive HCV antibody and 11.1% out of negative HCVantibody.• 93.3% of positive HCV RNA were positive for HCV antibody and6.7% were negative for HCV antibody...100Summary&~" .."..• ,•."""." ...,.~~,",:~;• SensitivltjT'ofElISA was 93.3;% but specificity Was 35.6% .I I• The prevelance of HCY antibody as well as HCY RNA wassignificantly higher in cases of elevated ALT level and elevated bothAST and ALT together.• The most prevalent genotype was type 4, type 4 with its subtypes thenmixed type 4a with type 1a