J Bacteriol Parasitol 2016, 7:6 (Suppl)
http://dx.doi.org/10.4172/2155-9597.C1.026

Hepatitis C virus (HCV) genotype 1b is associated with a higher hepatocellular carcinoma incidence in patients with underlying HCV cirrhosis

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Background: Hepatocellular carcinoma (HCC) is one of the most common causes of morbidity worldwide, accounting for about 7% of all cancers and over 80% of primary liver cancer. A recent estimate indicates that it is the fifth and the seventh most common cancer in males and females respectively with approximately one million deaths per year, especially in developing countries and represents one of the major dreaded complication of chronic liver disease, frequently associated with compensated cirrhosis. It has been reported, in fact, that approximately 3-4% of HCV chronically infected patients with underlying cirrhosis will develop HCC on average 30 years after infection.

Aim: The purpose of this study was to clarify the role of hepatitis C virus genotype 1b in HCC development.

Methods: 152 consecutive cases of HCC, fulfilling the criteria from the Barcelona 2000 EASL conference and 147 patients with other tumors as control group were included in the study. Serum of each patient was evaluated for serology of HCV, viral load estimation and genotyping.

Results: 80.9% of HCC patients had positive anti-HCV significantly greater than the control group (39.4%; $p<0.0001$) with a risk of progression to HCC 6 times higher. Significantly higher rate of anti-HCV seropositivity was shown among male patients with HCC (90.5%) than among females (59.6%; $p<0.0001$). Males anti-HCV positive were significantly showed to have about 6 and half times risk of progression to HCC (OR=6.45; 95% C.I=2.6-15.4) than females. Furthermore, anti-HCV rate increased steadily with the age, ranging from 5.7% in patients with less of 60 years to 94.3% in patients with over 60 years ($p<0.001$). On the contrary, this pattern was not recorded among the control group, suggesting that anti-HCV positive older patients have a risk of progression to HCC almost 13 times higher than the control group (OR=12,8, 95% C.I=5.2-31.4) HCV RNA rate was significantly higher (83.7%) among HCC patients than in the control group (44.2%, $p<0.0001$) and the most prevalent genotype was 1b (68.0% in HCC vs. 26.3 in the controls $p<0.001$) with a risk of progression almost 6 times greater than patients infected by other genotypes.

Conclusion: HCV genotype 1b is associated with a statistically higher risk of developing HCC if compared to other genotypes. A prospective study with larger number of samples will be needed to confirm our results.

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