The relation between HCV viraemia and splenic volume in chronic HCV infected patients

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ABSTRACT

For all patients the following were done: Thorough history, general and abdominal examination, CBC, FBS, serum Creatinine, ALT,AST, albumin, bilirubin, P.C ,HCVAb, HBsAg, Anti–shistosomalAb and quantitative PCR for HCV. Ultrasound was done for all patients and splenic volume was measured for all patients.

In our study the sample was homogenous and our groups were matching so, there was no statistically significant difference between **group Ia (+ve PCR before treatment)** and **group Ib (+ve PCR nonresponders)** regarding the demographic factors.

We found that, there was high statistically significant difference between **group Ia** and **control group** regarding splenic volume (mean splenic volumes were 174.31 and 157.29 respectively). That means that the **group Ia** have a higher splenic volume than the normal.

Also we found that, there is significant positive relationship between splenic volume and HCV RNA level in **group Ia** which means that the splenic volume increase as the HCV RNA concentration by PCR increase.

(Key words : The relation between HCV viraemia and splenic volume in chronic HCV infected patients

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ALT…… Alanine aminotransferase

ALP……..…… Alkaline phosphatase

AST……. Aspartate aminotransferase

ANC…….……..… Absolute neutrophil count

CD……...…….Cluster of differentiation

CMV……..…….Cytomegalovirus

COPD…….. Chronic obstructive pulmonary disease

CT (or CAT) scans…… Computed axial tomography

CBC…….. ……Complete blood count

DC…… Dendritic cells

EBV…….……..Epstein bar virus

EIA.....Enzyme Immune Assay

ELISA……....Enzyme linked immunosorbant assay

ETR……. End-of-treatment response

EVR……...…….. Early virological response

HBsAg……Hepatitis B- surface antigen

HBV……..……. Hepatitis B virus

HCV……..…..Hepatitis C virus

HCC…….….. Hepatocellular carcinoma

HIV…….…… Human immune deficiency virus

IFN……...…. Interferons

IRES…….…… Internal ribosomal entry site

IU……..……..... International Unit

fluA…….……..Influenza A virus

GGT……..…… γ-glutamyl transferase

LDH……..…… Lactic acid dehydrogenase.

MHC…….…Major histocompitability complex

NHANES III……. Third National Health and Nutrition Examination Study

PAT…….……. Parenteral anti-schistosomal therapy

PCR……..……Polymerase chain reaction

PT……..…….. Prothrombin time

MRI…….. Magnetic resonance imaging

RIBA……..……. Recombinant immunosorbent assay

RVR…….……. Rapid virological response

SVR…….… Sustained virological response

TMA…… Transcription-mediated amplification

WBCs……..White blood cells

Introduction

Hepatitis C infection is recognized as a major threat to global public health. An estimated 170 million people worldwide are infected, most of them chronically infected and at risk for liver cirrhosis and hepatocellular carcinoma (***WHO 2005).***

Following exposure to HCV, approximately 85% of patients develop chronic infection ***(Hoofnagle 1997 and NIHCDC 1997)*** which can lead to cirrhosis and hepatocellular carcinoma, that is the 12th ***(Anderson 2003).*** leading cause of death in the United States in 2000 Additionally, HCV-induced end-stage liver disease accounts for about 30% of liver transplants in industrialized countries, presenting a significant burden on health care costs ***(EASL 1999).***

Egypt has possibly the highest HCV prevalence in the world with 10-13% prevalence rate of HCV antibody positivity among general population ***(Mohamed 2004).***

animals vertebrate The spleen is an organ found in virtually all immune and the red blood cellswith important roles in regard to ***.(Mebius & Kraal, 2005)*** system

Recently, it has been found to contain in its reserve half of the that upon moving to injured tissue red pulp within the monocytesbody's while macrophages and dendritic cells(such as the heart) turns into " or the healing of lacerations***. (Swirski et al,*** wound healingaiding " ***2009)***

The normal spleen is usually not palpable, although it can sometimes be palpated in adolescents and individuals with a slender build.***(poulin et al, 1998)***

In many instances, the spleen enlarges as it performs its normal functions. ***(Zhu et al, 2009)***

Diagnosing the enlargement of the spleen can be done by many methods as calculation of splenic volume or measuring a single splenic dimension, some investigators found that, the Spleen length has been shown in several studies to have a high correlation with spleen volume, and can be used in daily clinical practice to determine splenomegaly. ***(Lamb et al, 2002),*** (***Bezerra et al, 2005)***

measurement of the splenic volume can be done by ultrasound which is more accurate compared to CT ***(Lamb et al, 2002), (Yetter et al, 2003)***

Although HCV persists in the majority of infected individuals, a small fraction of patients can successfully clear the infecting virus spontaneously without treatment. In a study on injection drug users, those who resolved previous HCV infection were 12 times less likely to be reinfected to develop persistent infection than people infected for the first time. In those who did become reinfected, the median peak HCV RNA levels were two logs lower than people infected for the first time to develop persistent infection. These findings suggest that a protective immunity does exist, which is capable of complete or partial control of HCV infection ***(Mehta et al, 2002).***

Aim of the work

As spleen is an important part of the immune system, HCV is an immunopathic organism and its pathogenicity depends upon the immune status of the host so, this study directed to assess the correlation between splenic volume and HCV RNA (measured by quantitative PCR).

Review