Introduction

At least 170 million people worldwide are chronically infected with the hepatitis C virus (HCV) (Lauer and Walker 2001) .

HCV infection is now the leading indication for liver transplantation in the United States and Europe .(poynard T et al. 2003)

Antiviral therapy for HCV infection has improved significantly in recent years and typically includes 24 to 48 weeks of therapy with pegylated interferon α (IFNα) and ribavirin. This regimen is successful in approximately 50% to 60% of those treated. (McHutchison JG et al. 1998)

The factors that determine the outcome of therapy are poorly understood. It is clear that viral sequences play a role in determining the outcome of therapy, since the response rates differ among individuals infected with different HCV genotypes. (McHutchison JG et al. 1998)

Host difference also contribute to different therapy outcomes thus response rates differs among different racial groups. (Reddy et al. 1999)

The actions of pegylated IFNs and ribavirin may be mediated by a combination of direct antiviral effects and stimulation of immune function. Type I IFNs are poduced in the infected liver, but they may not be sufficient to eliminate viral infection. (Bigger et al. 2001)

some reports suggest that HCV proteins can directly block IFN signal transduction and downstream effects.(Polyak et al. 2001).

Control of HCV infection may depend in part on chemokine-mediated recruitment of specific T cells to the liver. The chemokines comprise a set of 43 small proteins that influence cell localization, function, and growth by binding to G protein–coupled receptors on target cells. (Rot&, von 2004)

Chemokines associate with endothelial cells and the extracellular matrix near the site of their production, but elevated levels of specific chemokines have been reported in serum from patients infected with HCV. (Mihm et al. 2003)

CXCL10 (IFNγ-inducible protein 10, IP-10) may be produced by hepatocytes, sinusoidal endothelial cells, lymphoid cells, and monocytoid cells in the infected liver. (Shields et al. 1999)

The major function of chemokines is the recruitment of leukocytes to inflammation sites, but they also play a role in tumoural growth, angiogenesis and organ sclerosis (Muller et al. 2001)

Intrahepatic T and B cells in end-stage hepatitis C express the CXC chemokine receptor 3 (CXCR3) receptor for CXCL9, CXCL10, and CXCL11 (Boisvert et al. 2003)

CXCR3 is prominent on effector T cells and is associated with a T-helper cell type 1 (T_H1)–type response. (von& Mackay 2000)

These observations suggest that chemokines that bind to CXCR3 are important regulators of T- and/or B-cell localization in the liver during HCV infection. (Niet al. 2003)