Introduction

Chronic hepatitis C is one of the most common chronic viral infections worldwide and is the major cause of cirrhosis, end-stage liver disease and hepatocellular carcinoma ***(Alter and Mast, 1994)***.

Treatment with a 24 to 48-week course of interferon alfa with ribavirin can lead to a sustained eradication of the virus, which is associated with a long-term improvement in liver histology and reduction in the risk of cirrhosis and liver cancer ***(Lau et al., 2001)***.

The major side effects of interferon therapy include fatigue, influenza-like symptoms, neuropsychatric symptoms, and hematological abnormalities ***(Afdhal et al., 1999)***.

Interferon therapy is associated with a reduction in peripheral white blood cell counts (both neutrophils and lymphocytes). This has been attributed to bone marrow suppression or a reversible impairment in the release of neutrophils and lymphocytes. Peg-interferon results in a greater degree of neutropenia than does non pegyleated interferon ***(Peck et al., 2002)***.

Neutrophil count can fall to levels that are associated with an increase in the risk of bacterial infections and sepsis. Indeed, in the recent large randomized controlled trials of pegylated interferon combined with ribavirin neutropenia with listed as the most common reason for

dose reduction (18% of patients) and was a reason for early drug discontinuation in 1% of patients ***(Manns et al., 2001)***.

The management of neutropenia, like that of anemia, is variable. While some clinicians tolerate more profound neutropenia before recommending dose reduction, others are using filgrastim to raise the neutrophil counts in hepatitis C virus-infected patients receiving combination therapy ***(Van Thiel et al., 2003)***.

Although dose reductions for neutropenia will remain the standard of care until additional information is developed, new information suggests that, the timing of the interferon injection relative to measuring neutrophil counts should also be considered when making decisions about dose reductions ***(Radosavljevic et al., 2002)***.

Prospective studies have found that the patients had a better hematological response to the combination with Granulocyte-macrophage Colony-Stimulating (GCS) Factor therapy compared with interferon-alfa monotherapy but they failed to demonstrate any significant difference in the virological response ***(Gronbaek et al., 2002)***.