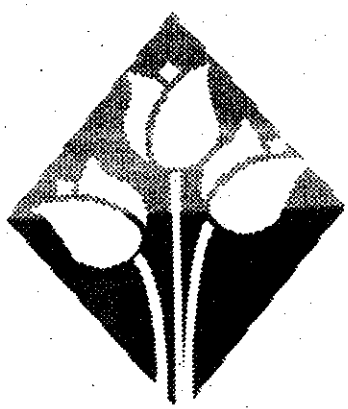
INTRODUCTION AND AIM OF THE WORK



Introduction and Aim of The Work

Hepatitis C infection is characterized by three key features, which are the consequence of a complex interaction between genetic determinants of immune and other host factors and viral characteristics: 1. A high rate of viral persistence after acute infection resulting from a combination of weak T cell responsiveness and specific viral mechanisms of immune escape. 2. Marked inter-individual variability in end-organ damage (fibrosis and cirrhosis), probably due to host genetic polymorphisms in genes governing the immune response and fibrosis pathways in addition to viral pathogenicity factors. 3. Significant resistance to antiviral therapies (forton et al., 2002).

In the United States and Europe, hepatitis C virus (HCV) infection has been detected in 1% to 2% of the general population and less than 1% of volunteer blood donors (McQuillan et al., 1997). In most developed countries, HCV infection is associated with percutaneous blood exposures and injection drug use (Alter et al., 1990). In contrast, a high prevalence of antibodies to hepatitis C virus (anti-HCV) has been found among apparently healthy Egyptian populations, such as expatriate workers in the Arab Gulf Region (31%) (Mohamed et al., 1996), blood donors (10%-28%) (Darwish et al., 1992) military recruits (22%-33%) (Abdel-Wahab et al., 1994), rural primary school children (12%) and rural village inhabitants (16%-18%) (Kamel et al., 1994). Further more, in one of the largest community based survey to date, Abdel-Aziz et al. (2000) reported that the overall anti-HCV prevalence among rural area inhabitants was 24.3%.

The outcome of HCV infection (i.e. viral clearance or persistence) and the manifestations and degree of liver disease is the result of complicated interactions between the virus and the immune response of the host. Remarkably, most de novo HCV infections are clinically unapparent and characterized by high incidence (70%) of chronically

evolving hepatitis, which suggests that HCV may have evolved strategies to not induce, overcome, or evade efficient immune responses of the host. This may be a multifactor process, influenced by viral tissue tropism, replication, sequence variation and by functional alteration of the infected cells (Rehermann, 2000).

Flow cytometry is a high-precision technique for rapid analysis and sorting for cells and particles. This fluorescent detection technique provides statistical accuracy, reproducibility and sensitivity, and allows the simultaneous measurement of multiple parameters in a cell-to-cell basis (Cunningham, 1999).

In the present study the flow cytometry analysis was utilized to examine the immunophenotyping of both intrahepatic and peripheral blood hyepatocytes in patients with chronic hepatitis C. Monoclonal antibodies against CD3 (T lymphocytes), CD4 (T helper), CD8 (cytotoxic T lymphocytes), CD19 (B lymphocytes) and CD56 (Natural killer cells) were utilized in order to gain further insight into the host immune response in patients with chronic hepatitis C in Egypt, and to assess whether a particular lymphocyte subset could be detected in liver and peripheral blood of patients with chronic hepatitis C. We also tried to find correlation between the various lymphocyte subsets and each of the serum alanine transaminase (ALT) level and histopathological activity score (Knodell's Score). Data was compared with those of the control group.