INTRODUCTION AND AIM OF THE WORK

Factors determining the outcome of chronic liver disease are not fully understood, but clearly both cellular and humoral immune responses of the host are important determinants *(Dudley et al., 1972 and Eddleston and Williams, 1974).*

In chronic liver disease, there have been reported decreased production of interferons (IFNs) *(Kato et al., 1982 and Fuji et al., 1987)* and interleukin 2 (IL-2), and a decrease of T cell response to IL-2. The mechanisms for these abnormalities have not yet been clarified *(Yoshioka et al., 1984).*

Tumor necrosis factor (TNF) is a hormone - like signal peptide produced by activated monocytes or macrophages and possibly by other cells in response to stimulation by endotoxin. TNF was first described by *Carswell et al. (1975)* as a protein found in the serum of mice treated with Bacillus Calmette - Guerin and bacterial endotoxin. Its characteristic effect in vivo is the production of necrosis in experimental animal tumors *(Matthews, 1983, and Matthews and Watkins, 1984).* TNF has diverse biological effects in other experimental systems including killing of tumor cells in vitro *(Old, 1985),* inhibition of the activity of lipoprotein lipase (cachectin activity) *(Beutler and Cerami,1987),* mediation of some of the lethal effects of endotoxin in animals *(Beutler et al., 1986),* stimulation of granulocytes *(Old, 1985, Vilcek et al., 1986 and Beutler and Cerami, 1987),* damage to endothelial cells *(Beutler, 1990),* bone resorption *(Bertolini et al, 1986),* antiviral activity *(Mestan et al., 1986 and Wong and Goeddel, 1986)* and

cytotoxic effects against malarial parasites *(Scuderi et al., 1986)*. TNF is also implicated in the regulation of normal cell metabolism and as an effector molecule in various inflammatory processes *(Maury et al., 1989)*. Raised serum TNF levels are associated with some infections in man *(Waage et al .,1987)*. Macrophage-produced TNF is referred to as TNF-α to distinguish it from lymphocytotoxin (LT), a closely related lymphocyet- product which may be called TNF- β *(Pennica et al., 1984)*.

The gene for human TNF has been cloned and expressed in Escherichia coli in several laboratories making large quantities of recombinant human TNF (rh TNF) available for experimental and clinical evaluation *(Yamazaki et al., 1986)*. The TNF gene in man is located on chromosome 6 *(Nedwin et al., 1985)*. The precise physiological role of TNF and its role in disease is unclear *(Selby et al., 1987)*.

The present study was undertaken to clarify whether there is an abnormality of TNF-α production in children with chronic liver disease and to determine the cut-off value of TNF-α in chronic liver disease.