Chapter 3

Scope and Plan
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From the available literature, it is almost a consensus that HIV infection can occur in an individual who is already infected with HBV and/or HCV; conversely an individual who are chronically infected with HBV or HCV can also get superinfected by HIV. It is also observed that coinfection of HIV with HBV and/or HCV results in high viral load of hepatitis viruses and greater liver damage. However there are conflicting views on the pattern of disease progression in these groups of infection patterns depending on the geographic regions of the study. In addition to the above inadequate global picture on HIV/Hepatotropic virus infections, the sketchy studies in India necessitated a properly planned prevalence pattern study to be conducted in this part of the country, Tamilnadu with the following objectives:

3.1 PREVALENCE AND RISK FACTORS OF HBV AND HCV INFECTION IN HIV INFECTED PERSONS

Studies on the prevalence of HBV and HCV infection will help to determine whether base line screening for markers of HBV and HCV are needed for effective management of persons with HIV infection. Hence, the prevalence of HBV and HCV in persons with HIV were studied.

3.2 STUDIES TO ANALYSE INTERACTION BETWEEN HIV AND HEPATOTROPIC VIRUSES

The course of HIV disease is very long with several stages and well characterized. However, the HBV/HCV coinfected HIV cases may have a different disease progression pattern besides posing a serious problem to the treating
Hence the following aspects were studied in the patients included in this study.

3.2.1 To analyse correlation between HBV and HCV viral markers profile in HIV disease groups (CDC-1993 revised)

3.2.2 To study the opportunistic infections in HIV patients and the impact of Hepatitis B and Hepatitis C coinfection.

3.2.3 To analyse ultra sonogram findings of the liver in HIV, HIV/HBV and HIV/HCV infected patients with and without Antiretroviral therapy.

3.2.4 Analysis of CD4 and CD8 counts in HIV, HIV/HBV, HIV/HCV infected patients with and without antiretroviral therapy.

3.3 STUDIES ON INTERACTION OF HIV AND ASYMPTOMATIC CHRONIC HBV INFECTED INDIVIDUALS

3.3.1 To analyse the seroprevalence of HIV in asymptomatic chronic Hepatitis B virus infected individuals (Carriers).

3.3.2 To study the viral markers profile in chronic HBV infected cases with HIV association.

3.4 STUDIES ON HIV COINFECTED CHRONIC LIVER DISEASE (CLD) PATIENTS

3.4.1 To determine the prevalence and viral markers profile of HIV coinfection HBV positive chronic liver disease patients
3.4.2 To analyse the rate of HIV coinfection in HCV infected chronic liver disease patients and to study the HCV marker profile among them.

3.4.3 To analyze the rate of HIV infection alone in HBV and HCV negative chronic liver disease patients.

**Molecular analysis**

3.5 **HBV PRECORE /CORE MUTANTS STUDY**

3.5.1 To study the nucleotide variation of Core/ Precore open reading frame (ORF) of HBV in HIV/HBV coinfected HIV-disease patients.

3.5.2 To study the nucleotide variation in the Core/ Precore open reading frame (ORF) of HBV in HBV carrier, HBV infected CLD patients without HIV association.

3.6 **HCV GENOTYPING BY COMMERCIAL KIT**

3.6.1 To analyse the pattern of hepatitis C virus genotype in patients with HIV coinfection.

3.6.2 To analyse the pattern of HCV genotype in HCV carrier, HCV positive CLD cases, HCV positive AVH cases, and HBV & HCV coinfected cases without HIV coinfection.