A Study on the Prevalence of Dengue, Hepatitis B and HIV in Tiruchirappalli Region

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ABSTRACT

Viral diseases such as rabies, yellow fever and smallpox have affected humans for centuries. Examples of common human diseases caused by viruses include the common cold, influenza, chickenpox, diarrhea and cold sores. Serious diseases such as Ebola, AIDS, Avian influenza and SARS are caused by viruses. The ability of viruses to cause devastating epidemics in human societies has led to the concern about viruses. Hence the prevalence of Hepatitis, Dengue and AIDS virus has been undertaken in the present study by using ELISA in Trichy area. Different diagnosis tests were carried out for these virud diseases, which are more prevalent in India with the aim of their diagnosis, cure and effective management

Hepatitis implies injury to liver characterized by presence of inflammatory cells in the liver tissue. Hepatitis can also be due to toxins (notably alcohol), other infections or from autoimmune process. It may run a sub clinical course when the affected person may not feel ill. The patient becomes unwell and symptomatic when the disease impairs liver functions that include, among other things, screening of harmful substances, regulation of blood composition and production of bile to help digestion (Arankalle *et al*., 1994).

Dengue ever is an infectious disease which is characterized by severe pain in eyes and head extremities. It is transmitted by the bite of a mosquito break bone fever was first described by Benjamin Rush in 1780 in Philadelphia, the vector (*Aedes aegypti*) was implicated in 1905 and Albert Sabin isolated the virus in 1945 (Alcon *et al*., 2002).

Transmission of HIV among injection drug users occurs primarily through HIV infected blood contamination of injection paraphernalia, which is re-used by uninfected injection drugs users. Behaviors that increase the likelihood frequency and magnitude of exposure to infected blood increase the risk of infection. Among injection drug users, several demographic and behavioral characteristics are associated with greater risk of acquiring HIV. Foremost among risk factors is the sharing of needles, syringes and other injection equipment. Sharing is a common practice among injection

drug users world wide (Burack Jeffrey and Bangsberg, 1998).

Diagnosis is done by knowing the level of Alkaline Aminotransferase (ALT), Alkaline Phosphatase (ALP), Aspartate Aminotransferase (AST), Bilirubin levels, urea, creatinine, albumin, globulin and detecting viral antibodies, viral proteins and genetic material. Detection is done by ELISA procedure which uses direct sandwich assay. As dengue, hepatitis, HIV are more prevalent in India so this study focuses on diagnosis of these viral diseases as the proper diagnosis is crucial in not only curing but diseases management also.

MATERIALS AND METHODS

The blood was obtained by venipuncture and was allowed to form clot at room temperature (20-25^{0}C) and then centrifuged. The serum was separated as soon as possible and refrigerated (2-8^{0}C) or colder if not tested within two days. Self-defrosting freezers were avoided as it was not recommended for storage. Lipaemia or microbial growth is not recommended. The NCCLS provides recommendation for storing blood specimens (Approved standard procedure for the handling and processing of blood specimens, HI8-A3, 2004).

Detection of dengue virus:
Serum dengue NSI antigen, when present,