

Editorial

HBV, HCV and HIV: Comparable Yet Contrasting

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Citation

Krishna Prasad MS, Karnekar V. HBV, HCV and HIV: Comparable yet contrasting.
*Online J Health Allied Scs.*2005;2:1

URL

<http://www.ojhas.org/issue14/2005-2-1.htm>

Open Access Archives

<http://cogprints.ecs.soton.ac.uk/view/subjects/OJHAS.html>
<http://openmed.nic.in>

Abstract:

Hepatitis B, Hepatitis C and Human Immunodeficiency Virus infections have become a formidable challenge globally due to the chronic nature of the infection and life threatening complications. The common mode of transmission has led to co-infections and increased morbidity and requires concerted control efforts.

Key Words: Hepatitis B Virus, Hepatitis C virus, HIV

Hepatitis B virus, Hepatitis C virus and Human Immunodeficiency Virus (HIV) have in the recent years posed significant challenges to the health care professionals all over the globe. Even though belonging to different classes of viruses, these share features that are especially important with regard to their control and prevention of complications (Table 1). These viruses have a marked ability to spread from one person to another by parenteral route especially sexual contact. Even though blood transfusion can be the most effective way, introduction of stringent laws enforcing screening tests for all the three viruses has reduced such transmission to a great extent in many countries. Other methods of transmission continue to draw the attention of health workers to be tackled effectively. With an ever-increasing population of addicts and sexual promiscuity the challenge continues to be grave. It is also to be noted that the concomitant infection of these viruses leads to higher frequency of carrier state and severe manifestation of the disease. The problem is compounded further by the non-availability of protective vaccines against HIV and HCV.

This puts more impetus on early detection and prevention to be implemented in the community to tackle the problem effectively. There is a need to focus on the incidence of coexisting disease by these viruses and to study the progression of disease in such cases.

Table 1: Similarities and differences between HBV, HCV and HIV

Features	HIV	Hepatitis B	Hepatitis C
Family	Retroviridae	Hepadnaviridae	Flaviviridae
Genus	Lenti virus	Orthohepadnavirus	Unnamed
Virion size	80-120 nm	42 nm	30-60 nm
Virion shape	Spherical	Spherical	Spherical
Envelope	Yes	Yes (HBsAg)	Yes
Genome	ss RNA	ds DNA	ss RNA
Genome size	9-10 kbp	3.2 kbp	9.5 kbp
Stability	Ether sensitive	Acid sensitive	Ether sensitive and acid sensitive
Site of replication of genome	Nucleus	Nucleus	Cytoplasm
Transmission	Parenteral	Parenteral	Parenteral
Prevalence	High	High	Moderate
Chronic disease	Yes	Often	Often
Oncogenic potential	None	Yes	Yes
Age affected	Any age	Any age	Adults
Incubation Period	Variable	50-180 days	40-120 days
Illness	Severe	Occasionally severe	Moderate
Carrier state	Present (life long)	Common - 3 types Simple carriers: Low infectivity, have a low titre of HBsAg in blood, negative for HBeAg, HBV and DNA polymerase Chronic carriers: Those who carry HBsAg in the blood for more than 6 months. Super carriers: Those who have a high titre of HBsAg, HBV, DNA polymerase and HbeAg in the blood	Present
Material	Blood, semen, organ transplants, Parenteral	Blood, semen, organ transplants, Parenteral	Blood, semen, organ transplants, Parenteral

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