

Herpes Simplex Virus-Infectious Disease

Haritha Ravula*

Department of Biotechnology, Hyderabad Central University, Hyderabad, India

A Herpes Simplex Virus (HSV) is a part of the Alphaherpesvirus subfamily of Herpesviruses. They are of two types (HSV-1) Herpes simplex virus type-1 and (HSV-2) Herpes simplex virus type-2. This virus is a contagious virus transmitted from person to person when they contact an infected person. More chances are there when children reach the affected patients, and they can carry this infection for a lifetime, and they will be carriers [1].

Structure of the Virus: Herpes simplex virus structure comprises a four-layered system, which contains Double-stranded DNA, and is enclosed by an icosapentahedral capsid composed of capsomers. This capsid is covered by a protein coat called tegument and which surrounded by a glycoprotein lipid bilayer [2].

Mode of Infection by HSV into Host: The interaction aims to tether the virus to cells to concentrate the virus at the cell surface. Virus HSV enters the host cell by using several glycoproteins (These glycoproteins are (gB, gC, gD, gH, gK, gL, and gM) on the surface of the envelope by transmembrane receptors on the cell surface.

In general, the glycoproteins (gB, gC) attach to the cell surface particle called heparan sulfate. The receptor gD undergoes conformational changes, and proteins gH/gL leads to the membrane fusion by allowing the virion to attach to the cell surface and make pores and enter the host cell.

Causes & Symptoms of HSV1&2: The majority of HSV-1 infections are present in or around the mouth, and some are affected genital or anal area, called genital herpes. In comparison, the Herpes simplex virus 2 (HSV-2) infections are caused by sexual transmission. It mainly causes genital herpes, which persists for life long.

In general genital herpes do not show any symptoms; very rarely symptoms are recognised. When these symptoms are recognizable, they will appear as blisters or sores. Further symptoms include fever, body pains etc. People infected with HSV-2 may experience severe pains in the legs and hips.

Prevention of HSV 1&2: Persons who are exposed to Type 1 HSV infection are less prone to effect again. Transmission of disease from one person to another can be avoided by having safe sex, preventing getting genital herpes. There are few chances for the persons getting HSV-2 who are already affected with HSV-1. Women who are having symptoms of genital herpes should be informed to healthcare providers to avoid affecting the neonate.

People with HSV can be check with HIV and HPV further infections.

Persons with HSV are high to get HPV and HIV infections. Diagnosis can be made by using Real-time quantitative PCR.

Drugs such as acyclovir, famciclovir, and valacyclovir show more impact on the people infected with the HSV. They help reduce the symptoms' frequency and severity, but there is no permanent cure for HSV [3]. According to the WHO, increasing the number of HSV infections and their symptoms, there is a need in increasing no antiviral medications and protect further infecting from HIV. There should be the development of the treatment, prevention for HSV 1 & 2, and development of a vaccine for herpes simplex virus must be considered a significant target as no of infecting patients worldwide are more in number [4]. Many candidate vaccines and microbicides are being studied for the betterment of the treatment.

References

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*Address for Correspondence: Ravula H, Department of Biotechnology, Hyderabad Central University, Hyderabad, India; E-mail: harithadrr@gmail.com

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