

Rabies:A Viral Disease,Genome Virology,and its Prevention Usman Ali Ashfaq

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Abstract

Rabies is an viral infection disease caused by the rabid animal to the warm blooded animals (zoonotic) particularly human. Rabies caused more than 150 countries. According to an statistics by WHO, almost 55,000 people die of rabies every year. The stray Dogs are the major reason behind this, nearly 99% human deaths caused by dog's bites. Developing and still developing countries, both are the effected by rabies. With the most preventive course , 327,000 people can prevent this disease yearly. Rabies is caused by a virus, which mainly attacks on the nerves system and later exude in saliva . A person or animal can become a victim of rabies by Bite from animals . Rabies also affects the central nerves system like spinal cord with symptoms like flu, fever, headache, but the infection can develop rapidly to hallucinations, paralysis, and lastly to death.

of the virus encryptes five genes there order is highly conserved. Some of them are discussed and they are nucleoprotein (N), phosphoprotein (P), matrix protein (M), glycoprotein (G), and a viral RNA polymerase (L). All viruses have two major structural components.The two proteins phosphoprotein and polymerase are associated with RNP. The glycoprotein forms there are likely 400 trimeric spikes, which are packedly arranged on the surface of the virus . The virus nucleoprotein (N) playsvery important role in replication and transcription. Rhabdoviruses cell recipator are not identified but some researchesouts the phospholipids, especially phophatidyl serine as the cell surface receptor molecule are likely to be identified . After endocytosis, pH-dependent fusion with the membrane of the endocytic vesicle will occurs rapidly . The polymerase which is carried out by the virus will produce individual mRNA for each protein. The switch between transcription and replication of genomic RNAs are controlled and properly managed by the level of N protein.

Introduction

According to the WHO global vaccines research forum, over 30,000 people die annually due to rabies in Asia. According to statistics of WHO, high death rate was experienced in India in 2004 and lowest in Cambodia and Magnolia . In asain countries like china and india in 2006-2007, more than 3,000 rabies cases were reported which are reduced to 205 in the year 2008 in China . In India annually , about 15 million people are bitten by dogs, it has been reported that 25,000-30,000 deaths are due to rabies annually, but due to preventive measures, the death rate decreased to 20,585 per year manually . Nepal had the highest reported rate of human rabies deaths in the world . The Kathmandu Animal Treatment center say that 200 people die in Nepal an nually due to rabies as only in Kathmandu, as in this place there are more than 35,000 street dogs are reported.So by the presence of huge number of stray dogs leads to the huge population of stray dogs there increases the chances of rabies infection more effectively. In countries like Srilanka over 95% of 100 human rabies deaths occur each year due to the bites by occurred due to unvaccinated dogs.

Method

Rabies belongs to species of types called *Lyssavirus* genus of *Rhabdoviridae* family. The virus is enveloped and contain a single stranded negative sense RNA genome . The RNA genome

Prevention

Post exposure prophylaxis consists of a large number of rabies vaccines . Another way is by Mass dog vaccination which is more cost-effective way to save human lives by stopping transmission of rabies at its source. There is very much possibility of transmission of variety of animal species can host rabies but most cases the dogs are responsible for 99% of human victims. So interrupting rabies in dogs is therefore key to prevent inhuman disease.

Conclusion

Rabies is a viral disease that can be spread mostly through domestic and wild animals. Most of Asia contries are victims of rabies.But from past few year there is a drastic decrease in rabies death rate. This shows that rabies can be successfully knock out from the high-risk areas by taking preventing measures. The use of scientific medicine also made rabies control possible. It can be kept in control by public awareness also by taking care by vaccinating the stray dogs .

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