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Brief review of Rhabdovirus -Rabies Disease

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Abstract:

Rabies is viral disease that causes acute encephalitis seen in warm blooded animals which includes all mammals. Rabies is caused by lyssa virus the disease spreads to people through close contact with rabies infected saliva via bites or scratches. The main symptoms like hydrophobia which is fear for water and convulsions are seen. Fluorescent antibody test (FAT) is the standard diagnostic test for rabies. There is no treatment for rabies only preventive measures are to be followed therefore, awareness campaign, animal vaccination, Pre-exposure prophylaxis for the people who are in higher risk should be done to hinder the spread of disease.

Keywords: Rabies, Viral disease, Hydrophobia, Rabies awareness programmes

Introduction:

Rabies is a zoonotic fatal viral disease that causes acute encephalitis (Inflammation of the brain). It is a disease of warm-blooded animals any mammals can get rabies cats, cattle, and dogs, bats, foxes including humans. It is caused by genus Lyssa Virus Type 1, Rhabdoviridae family of bullet shape virus, enveloped contains ss RNA as gnome. There are two types of virus street type virus and fixed type virus.

- **Street type virus:** It is a naturally occurring virus found in the saliva of the infected animals
- **Fixed type virus:** It has predictable features, including an incubation period and pathological and clinical effects. It is an attenuated virus that has been passage through a laboratory *(Jackson, A. C. 2011).*

How Rabies is transmitted?

Rabies is transmitted through humans mainly by,

- Scratches
- Bites
- Licks from infected animals (saliva)
- Non-bite exposures: Aerosois; generated in labs, bat caves containing millions of bats, corneal transplantation, organ transplantation from donors with rabies. (Leung AK.et.,al 2007)

Symptoms of Rabies:

- **Incubation period:** It takes an incubation period before symptoms manifest. The duration of the illness

often spans between one week and one year, contingent upon the site of viral entry into the body and the quantity of viral particles implicated. The consequences are more likely to appear sooner the closer the bite is to the brain. When symptoms arise, rabies is typically lethal.

- **Prodrome Period (Onset of symptoms):** fever of 100.4°F (38°C) or above, headache, anxiety, feeling generally unwell, sore throat and a cough, nausea and vomiting, discomfort at the site of the bite.
- **Neurological period:** Symptoms may include confusion, aggression, muscle twitching, rigid neck muscles, convulsions, difficulty breathing, hypersalivation, fear of water (hydrophobia), hallucinations, nightmares, insomnia, and photophobia (fear of light).
- **Coma and death:** An individual could go into a coma, and the majority of people die within 2 to 3 days. Even with supportive therapy, almost no one survives rabies while in a coma.

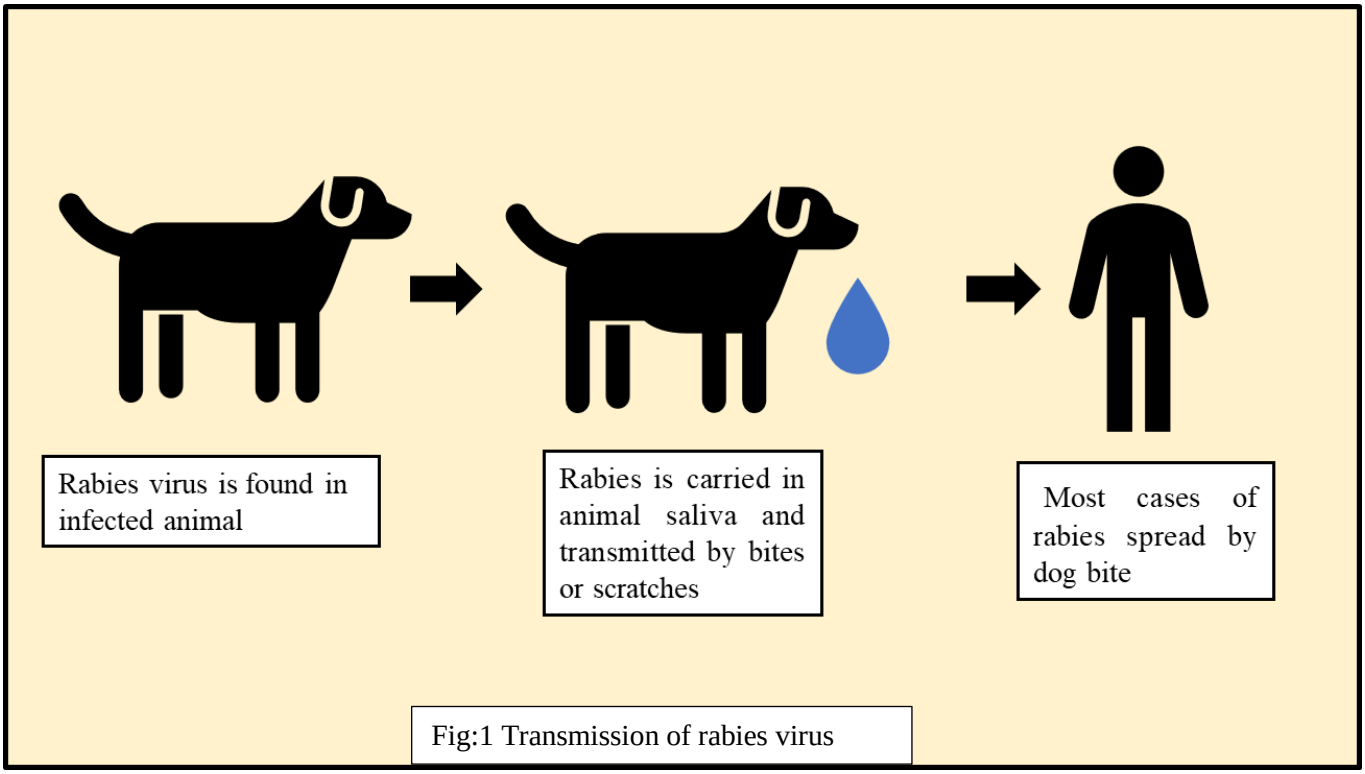


Fig:1 Transmission of rabies virus

Diagnosis of Rabies:

- It is preferable to perform laboratory procedures on central nervous system (CNS) tissue that has been extracted from the brain**.**
- **The fluorescence antibody test** (FAT), **Mouse inoculation test** (MIT)
- **Reverse-transcription polymerase chain reaction** (RT-PCR) These are the diagnostic procedures used to identify rabies in clinical samples. and These techniques cannot distinguish between street and laboratory-fixed viruses; they can only identify the presence of the virus in clinical samples.
- Serological tests include indirect immune-fluorescence, virus neutralization and enzyme-linked immunosorbent (ELISA)

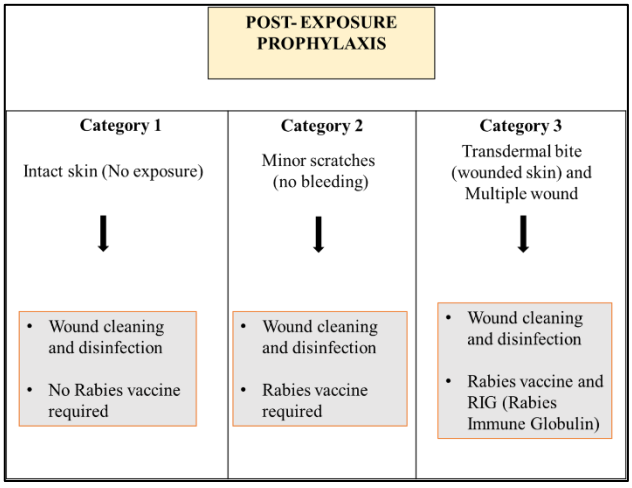
Prevention of Rabies:

Since there is no known cure for rabies, prevention steps must be made. The goal of disease prevention methods is to hinder animals from spreading the rabies virus or to treat humans after they have been exposed to it (Pre and

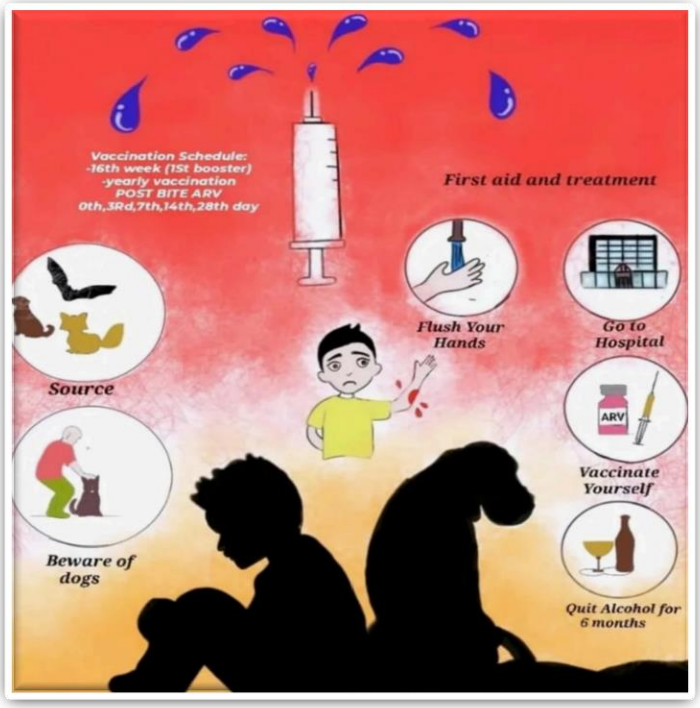
Post exposure prophylaxis in rabies)

- **Post-Exposure Prophylaxis:** Following quick wound cleaning and disinfection, rabies vaccination and human rabies immunoglobulin
- **Pre-Exposure Prophylaxis:** It is done in person who have high risk of repeated exposures like Animal Handlers, Wildlife officers, Veterinarians, Lab; Staffs working with rabies virus.

Vaccine doses 0th day, 3rd day, 7th day and 21st or 28th days and yearly booster of rabies vaccine is recommended. *(Hankins, Daniel G. et al.2004)*



Rabies awareness Programme and rabies awareness posters engages communities and empowers people to save themselves from this fatal disease.



Conclusion:

Rabies is a fatal disease and it emergers as a new major public health problem because of a lack of knowledge regarding rabies risk, and not knowing the proper management. Hence a proper awareness programme and campaign should be conducted to educate the people and vaccinating the animal population against rabies.

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