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Popular Article
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Rabies - A Public Health View

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INTRODUCTION

Rabies is an extremely deadly viral disease and also zoonotic, meaning it can be transmitted between animals and humans. This particular type of zoonosis is known as direct anthropozoonosis. Rabies is most commonly observed in stray dogs and certain wild animals such as bats, raccoons, skunks and foxes. Humans typically contract the virus through bites or scratches from these infected animals. Dogs are the primary source of human rabies fatalities, accounting for up to 99% of all transmissions to humans. In India, rabies is endemic in certain regions and is responsible for 36% of the global rabies deaths. The rabies virus targets the central nervous system, causing encephalitis in the brain, which can lead to death in severe cases. World Rabies Day is celebrated every year on 28 September.

ETIOLOGY

Causative agent of rabies is Lyssa virus of rhabdoviridae family. It is a bullet shaped virus and neurotropic in nature. Rabies viruses are extremely fragile viruses.

TRANSMISSION

- Infections are caused by the bite of a rabid animal or occasionally by the scratch of the rabid animal.
- Saliva of infected dog is most common source of rabies transmission because of a very high concentration of rabies virus liberated from the salivary gland discharge before the onset of clinical signs of rabies.

CLINICAL SIGNS

The progressive sign of rabies mainly divided into two forms such as furious form and dump form or paralytic form.

❖ **Dog and Cat**

The incubation period in natural outbreak of dog rabies averages from 3-8 weeks. But it can be from 10 days to years. In cat, furious form is more common.

A. Furious form (Changes in behaviour and stage of excitement)

- Dog become very furious and have tendency to bite either inanimate or animate objects till death.
- Dog may move to long distance.
- They will show imaginary catching stance.
- Dog may try to lick water but unable to drink water due to the paralysis of pharyngeal and laryngeal muscles.
- Drooling of saliva.
- Photophobia (fear of light).
- Changes in barking due to paralysis of vocal cards.
- Finally, the jaw is dropped, and tongue will protrude, and head will drop down.

B. Dump form or paralytic form

- Isolated themselves in dark places due to photophobia.
- Paralysis of lower jaw (dropped jaw), tongue, larynx, and hindquarters.
- Not capable to bite due to dropped.
- In terminal phase death due to respiratory paralysis.

❖ **Cattle**

A. Furious form

- Aggressively attacks other animals and inanimate objects
- Loud bellowing
- Incoordination of gait
- Excessive salivation
- Behavioural changes
- Tremor in muzzle
- Aggressive in behaviour
- Sexual excitement
- Hyperexcitability
- Pharyngeal paralysis

B. Paralytic form

- Knuckling of hind fetlock
- Sagging and swaying of hind quarter while walking
- Deviation of tail to one side
- Drooling of saliva
- Yawing movement

❖ **Humans**

- The incubation period for rabies in humans is highly variable, typically ranging from 3 to 8 weeks.
- The severity of the infection is influenced by the location of the bite.
- During the prodromal phase, patients experience symptoms such as low-grade fever, loss of appetite, headaches, body aches, weakness, and fatigue.
- Clinical rabies is characterized by hyperexcitability, with increased sensitivity to touch, sight, and sound.
- The sudden onset of painful muscle spasms can cause difficulty in swallowing and lead to the expulsion of fluids. This phase often progresses to delirium and coma, ultimately resulting in death.

DIAGNOSIS

- Consider rabies as a possible problem in any animal of unknown vaccination history showing central nervous system signs or systems.
- Fluorescent antibody test (FAT) with corneal impression smear, as well as brain. FAT considered as highly specific and rapid test (99.9%).
- Identification of Negri bodies (intracytoplasmic inclusion bodies) in the brain impression smear by seller's staining technique.

TRAETMENT AFTER EXPOSURE

- Clean the wound and do immunizations, as soon as possible after suspect contact with an animal, can prevent the onset of rabies in virtually 100% of exposures.
- Post exposure care to prevent rabies includes.
- Washing and scrubbing the wound with phenolic soap and plenty of running tape water.
- Application of antiseptic.
- Avoiding bandaging or suturing of wound or point of contact.
- Administering anti-rabies vaccine as soon as possible.

POST EXPOSURE SCHEDULE

- If the animal is not previously immunized, post exposure vaccination on 0-day (the day starts within 24 hours after bite), 3rd, 7th, 14th, 28th and if necessary, on 90th day (Essen's schedule).

CONTROL

- Dogs are the primary source of rabies in India, affecting both humans and other animals. Therefore, control efforts should focus mainly on canine rabies.
- Vaccinating dogs as a preventive measure is crucial for effective rabies control.
- Managing the dog population, including the removal of stray dogs through methods like shooting or poisoning, is essential.
- Mandatory vaccination of pet dogs by their owners is required.
- Public awareness campaigns should be conducted to educate the general population about the disease.