

## RABIES- A PREVENTABLE TRAGEDY

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### ABSTRACT

One of the oldest and completely preventable viral infections, rabies kills about 59,000 people worldwide each year with India accounting for a large portion of these deaths. Children are particularly at risk and the majority of cases are caused by unvaccinated stray dogs biting people. Before developing into severe neurological problems, hydrophobia and death, the disease starts with flu-like symptoms and strange sensations at the bite site. Every year, millions of lives are saved by Post-Exposure Prophylaxis (PEP) which consists of prompt wound care, immunization and immunoglobulin where necessary. However, many people remain at risk due to low awareness and limited access to vaccines. Zero human deaths from dog-mediated rabies are the goal of international organizations and India's national programs by 2030; nevertheless, prevention through education, dog vaccination and timely medical attention is still essential.

**KEYWORDS:** Rabies, Post-Exposure Prophylaxis (PEP), Dog-mediated rabies, Stray dogs, Rabies prevention.

### INTRODUCTION

Despite being completely preventable, rabies is one of the most deadly viral diseases that humans have ever encountered. It is one of the oldest recognized diseases affecting all warm blooded animals and remains to be the most important zoonotic disease in India. Rabies which is present in more than 150 nations kills over 59,000 people annually one every nine minutes. Asia and Africa account for the majority of deaths with India alone bearing more than one-third of the worldwide burden. In India, rabies kills between 18,000 and 20,000 people annually many of whom are children under the age of 15. Rabies which is caused by a virus (*Lyssa virus* of *Rhabdoviridae*) targets the brain and is nearly always fatal once symptoms start to show. The disease can appear in different forms most patients develop the furious type marked by agitation, fluctuating consciousness, fear of water or air and abnormal reflexes while others develop the paralytic form that initially resembles nerve disorders like Guillain-Barré

syndrome. Rabies in animals typically manifests as abrupt behavior changes,

increased salivation and unprovoked biting. Despite its varied presentations, rabies shares one tragic fact it is almost always fatal once symptoms begin and yet it is a disease we can fully prevent. The only method to save lives is to prevent the disease by getting vaccinated and receiving treatment as soon as possible.

### TRANSMISSION

Rabies is often contracted by being bitten by a rabid animal generally a dog. The virus can spread swiftly through the body when an infected animal's saliva gets into the body through broken skin or the eyes, nose or mouth. Even minor cuts or scrapes that come into contact with contaminated saliva can be harmful. However, rabies is not transferred via casual contact such as stroking or touching an animal or coming into contact with its urine, feces or blood. The behavior that rabies induces in animals is particularly concerning. Dogs who are infected frequently exhibit restlessness and erratic behavior and they may

walk significantly longer distances than a healthy dog would typically cover. This makes it possible for the illness to spread quickly between populations, even to areas that are regarded as safe. Unknowingly moving dogs that are incubating the virus can sometimes cause epidemics in new locations. The fact that the virus may already be in an animal's saliva before any outward symptoms of disease manifest is another unspoken risk. This implies that a dog, cat or ferret that appears healthy may nevertheless transmit rabies days before exhibiting any symptoms. Depending on the type of rabies virus, the site of the bite and the immunological system of the individual, the interval between exposure and illness might vary greatly. Nearly 99% of human rabies cases are caused by stray dog bites. However, the disease can also spread by wild animals such as jackals, civets and rodents particularly in places where dense forests and populated areas coexist. The likelihood of rabies transmission from animals to humans is further increased by rapid urbanization and human encroachment into natural habitats.

### **SIGNS AND SYMPTOMS**

Humans and animals are affected by rabies in very similar ways. Fever, fatigue, headache and body aches are frequently appear to be a first clinical signs. Even before other symptoms show up many people experience odd sensations like tingling, burning or itching at the bite or scratch site. The illness starts to reveal its actual threat as the virus stealthily moves from the muscles close to the wound into the nerves and then the brain. From a few days to several months or even years the incubation period, the interval between the bite and the onset of symptoms can be erratic. The virus spreads quickly once it enters the brain producing inflammation and harming nerve cells. Serious issues include disorientation, anxiety, hallucinations, paralysis, muscle weakness and excessive salivation. Additionally, the infection may interfere with the body's natural processes leading to irregular heartbeats, blood pressure

fluctuations and excessive perspiration. Hydrophobia or a dread of water and aerophobia or a fear of air are the two most obvious symptoms of rabies. Even swallowing water or feeling a wind can cause excruciating spasms in the throat. Unfortunately, rabies almost usually results in coma and death within a few weeks after these symptoms manifest. Early prevention and prompt vaccination following any potential exposure are therefore vital.

### **PREVENTION AND CONTROL**

The most crucial thing to keep in mind regarding rabies is that with prompt treatment it is completely preventable. Rapid response following a bite or scrape can save a life, despite the fact that rabies is nearly invariably fatal once symptoms manifest. It is known as Post-Exposure Prophylaxis (PEP) and it can save lives.

The first step is straightforward but essential: carefully wash the wound for at least 15 minutes with soap and running water. This aids in eliminating the virus before it has a chance to infiltrate the nerves. Apply a disinfectant, such as iodine, if one is available, after cleaning, and get medical help as away.

A course of rabies vaccinations which prepare the body's immune system to combat the virus is typically advised by doctors. Injecting rabies immunoglobulin (RIG) or monoclonal antibodies around the wound is an extra treatment for those who have never received a rabies vaccination. While the vaccine trains your body to create long-term protection, they serve as a "ready-made shield." A vaccination dose is administered on Day 0 (the day of exposure) with further doses scheduled for Days 3, 7, and 14. These vaccinations are safe, effective, and only produce minor side effects including injection site discomfort or redness, a slight temperature or occasionally muscle aches. Compared to the older vaccines of the past, today's versions are much safer and better tolerated.

### **Who requires PEP?**

PEP should be administered to anyone who has been bitten, scratched or licked on

broken skin or mucous membranes (mouth, eyes) by a potentially rabid animal. You should never take a chance with rabies regardless of whether it was a dog, cat, bat or any other species. However, rabies cannot be spread by merely touching, caressing or coming into contact with an animal's blood, urine or excrement.

#### Why is prevention so crucial?

PEP is administered to around 29 million people globally each year averting innumerable deaths. However, in some regions of Asia and Africa where children are particularly vulnerable rabies is still a serious issue. The best method to lower human cases is to vaccinate dogs who are often the primary carriers in many nations. Actually, the ambitious target of "zero human deaths from dog-mediated rabies by 2030" is being pursued by international health groups.

#### CONCLUSION

The impoverished and most vulnerable people are disproportionately affected by the lethal disease rabies, particularly in rural areas of Asia and Africa including India. The

majority of cases are caused by unvaccinated stray dog bites, and the issue is exacerbated by low vaccination rates, a lack of knowledge, and a shortage of medical resources. Millions of people are still at risk even though rabies can be totally avoided with prompt vaccination and treatment. Global agencies such as the WHO, FAO, and OIE are collaborating to address issue, with the aim of preventing human fatalities from dog-mediated rabies by 2030. Stronger political will, more accessible immunizations, increased public knowledge, and community collaboration are all need to realize this dream. Until then, prevention through education, responsible pet vaccination, and timely medical care remain our most powerful tools against this ancient but preventable killer. India is combating rabies in a number of ways, including through tech-driven tracking, successful state models like Goa, and free vaccinations and training clinics under the NRCP and NAPRE programs for stray dogs. These projects are genuine advances toward the objective of zero human deaths from dog-related rabies by 2030.

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