

Risk of Rabies and the Traveller's Health

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Abstract:

Rabies is one of the deadliest infectious diseases. It is prevalent all over the world. As it is spread to humans and some animals by bite, scratch or direct contact with the mucous membrane of the infected animal. Most of the people coming to the African and Asian countries are exposed to rabies, special people coming from where the elimination of canine rabies has been achieved. Most of the travellers are aware of the rabies infection. Travellers know that animals, especially dogs, are the most common source of rabies infection. Most of the travellers don't have the seriousness of the infection. They don't find themselves as a potential source of the spread of the rabies infection. The vaccine against rabies infection is the main key to stopping the spread of the disease. Travel clinics are one of the platforms from which people can get all the information regarding infectious diseases occurring in the visiting area. The role of healthcare professionals in recommending rabies vaccination prior to travel to endemic areas is extremely important. The lack of knowledge and awareness of rabies exposure results in a variety of opinions on which travellers should receive pre-exposure prophylaxis (PrEP). It directly influences the recommendation and decision-making as it is based on individual perspective and interpretation rather than statistical data on rabies infection in each country.

Keywords: Endemic, Pre-exposure prophylaxis, Rabies, Traveller, Vaccination

Rabies: A Fatal but Preventable Disease

Rabies is a 100% fatal but preventable disease. It is a zoonotic, viral disease. It is spread to humans and some animals by bite, scratch or direct contact with the mucous membrane of the infected animal. In up to 99% rabies disease spreads to humans through dogs in children between 5 to 14 years is most prevalent.^[1] Rabies primarily affect the central nervous system, which leads to extremely brain disease and ultimately leads to death if medical care and vaccination are not received before

appearing the system. The medical care regarding the wound and the pre- and post-exposure vaccination plays a very important role in preventing rabies among humans as well as animals.^[1,2]

Rabies is one of the deadliest infectious diseases. It is prevalent all over the world except Antarctica. In Africa, Asia, and some areas of North and South America spread of rabies because of infected dogs very a major issue. Worldwide, more than 59,000 human deaths occur each year. In India, approximately 25,000 to 30,000

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human deaths occur because of it. Most death occurs in rural Africa and Asia because of poor knowledge regarding rabies, lack of health facilities and poor availability of the post-exposure prophylaxis (PEP).^[1,3,4]

Traveller's exposure to Rabies:

Travel is essential for work as well as to explore the world. As the facilities regarding international travel continue to increase and all continents are coming closer. Travel within the country as well as among countries is so common. As people come and go outside their countries, they are more exposed to certain diseases of that particular country. Rabies is one of the most common infectious diseases, which is 100% fatal, but at the same time 100% preventable. Most of the people coming to the African and Asian countries are exposed to rabies, special people coming from where the elimination of canine rabies has been achieved.

In developed countries, rabies is often imported from travellers, mainly from those who have travelled to African and Asian countries. Among Western European countries, rabies infections are infrequent.^[5] Since the 20th century, European countries have been following very strict rules and regulations regarding mass vaccinations of all animals that are imported as well as domestic animals like dogs. They are following measures such as quarantine regulations for imported pets. However, people from Europe can still get rabies infection after travelling in rabies-endemic countries. As intercontinental travel is returning to pre-pandemic levels, more people are at risk of exposure to a potentially rabid animal while travelling in rabies-endemic countries.^[6] As per the estimation that 1 in 300 travellers per month of stay in rabies-endemic areas come across an animal-related injuries with an indication for treatment with rabies Post Exposure Prophylaxis.^[7,8]

Rabies is a very rare infectious disease among travellers, with only five reported cases in the past 50 years. However, three cases were treated in the hospital in the past few years. The three patients seen most recently had acquired rabies infection in Kenya and

Haiti. The other two are in Indonesia and Morocco.^[7-9] All cases of rabies died very tragically despite knowing the fact that rabies is vaccine preventable disease. It is very common for travellers to experience a bite or scratch from a potentially rabid animal.^[10,11] According to a recent studies, a one-month stay in Southern Asia, Southeast Asia, Central America, South America or Africa is associated with a 0.4% chance of experiencing an animal-associated incident (AAI).^[12]

Awareness of Rabies infection among the travellers:

As per the research on most of the travellers are aware of the rabies infection. Travellers know that animals, especially dogs are the most common source of the rabies infection. Most of the tourists feel that, along with the dogs, cats also have the potential to spread the infection. The awareness about bats and other wild animals that can spread the rabies infection is very less. Most of the tourists know about the pre-exposure and post-exposure prophylaxis vaccination, but the health sickening behaviour towards the vaccination is very poor.^[8,12,13]

Most of the travellers don't have the seriousness of the infection. They don't find themselves as a potential source of the spread of the rabies infection. As per the studies done all over the world, travellers are not well known of the fact that every time touching to the animal can expose them to rabies infection. Many people don't know what to do after getting bitten, as well as if a scratch happens from a strange animal. Most people don't know how to go for the primary care to the patients of dog bites or animal bites as well which health facility they should visit for treatment.^[3] The awareness regarding vaccination among travellers is there, but how many doses, what if complete schedules are not followed, what are the fatal effects once the symptoms of rabies develop, travellers are unaware of the many things related to rabies. This is the main reason for getting more and more rabies infections among travellers.

Awareness of rabies disease engages most of the communities and empowers people. It will help to save

themselves by taking care of and health facilities they need. This includes an understanding of how to prevent rabies in animals, when to suspect rabies, and what to do in case of a bite. Public education for both children and adults on dog behaviour and bite prevention, what to do if bitten or scratched by a potentially rabid animal, and responsible pet ownership are essential extensions of rabies vaccination programmes.^[12,14,15]

Role of the health sector / Travel clinic to control rabies infection among the travellers:

As per the considerable amount of rabies infection risk among travellers, seek pre-travel health advice before intercontinental or inter-countries travel. This pre-travel consultation gives an opportunity to educate travellers about the prevalence of rabies at their destination and to administer vaccination against rabies. Administration of pre-exposure prophylaxis (PrEP) in order to obtain long-term immunity for future travels. As the shortage of time regarding discussion about the rabies infection, information, education and communication material can be provided to the travellers so that they can get awareness about it. Taking PEP after possible exposure to rabies must be done responsibly and quickly, and it is important that travellers are aware when and where to seek medical help.^[16,17]

Travel clinics are one of the platforms from which people can get all the information regarding infectious diseases occurring in the visiting area. The Department of Community and Family Medicine, AIIMS, Bhubaneswar is running Travellers Health Clinic. It can make people aware of the diseases as well as how to prevent them in the visiting destination. It can provide information about the infection as well as diseases, and where to seek health care if exposure happens. Travel Medicine can help in providing information, education and communication facilities to the tourist. They are providing vaccinations that are essential for travel to certain countries, like the Yellow Fever Vaccination. Inclusion of the pre-exposure vaccination for rabies also be included in certain endemic countries for rabies essential vaccination.^[18]

The role of healthcare professionals in recommending rabies vaccination prior to travel to endemic areas is extremely important. In the previous research, it was found that health Care facilities are more likely to prioritise hepatitis A, B and yellow fever over pre-exposure rabies vaccination to travellers.^[17] The studies have shown that the lack of knowledge and awareness of rabies exposure results in a variety of opinions on which travellers should receive PrEP. It directly influences the recommendation and decision-making as it is based on individual perspective and interpretation rather than the statistical data of rabies infection in each country.^[1]

Rabies Vaccination:

Active immunisation with rabies vaccine can be administered among travellers as pre- and post-exposure prophylaxis (PrEP and PEP, respectively). Effective vaccines are available to travellers both before and after potential exposures.^[18]

Pre-exposure prophylaxis (PrEP) is recommended before recreation or travel in some areas and for people living in remote, highly rabies-endemic areas with limited local access to rabies biologicals. It should be clear that PrEP does not replace the need for Post-Exposure Prophylaxis. Any person exposed to a suspected rabid animal should still seek post-exposure care. Post-exposure prophylaxis (PEP) is the emergency response to a rabies exposure.^[1,2,18] This prevents the virus from entering the central nervous system. A well-performed wound risk assessment and PEP protocol consists of:

- Extensive wound washing with water and soap for at least 15 minutes soon after an exposure;
- A course of rabies vaccine; and
- Administration of rabies immunoglobulin or monoclonal antibodies into the wound, if indicated.

The cost of the rabies vaccination is also one of the reasons for people are not very comfortable taking all doses of the vaccination. As the one health approach,

stepping forward toward the elimination of rabies, the cost of the vaccination should be pocket-friendly so that more and more travellers should take it and complete the schedule.

Conclusion and Recommendations:

Rabies is 100% preventable disease, despite the known fact that rabies continues to pose a fatal risk for travellers. The travellers who were all eligible for rabies PrEP and travelled to high-risk destinations or endemic countries, the majority did not consult with the health care facilities prior to travelling, and thus were not protected from rabies. Additionally, many health care facilities are not raising the need for PrEP with their patients who present for advice on travel vaccines. There should be increased awareness and a demonstrated need for increased education on the risk of rabies for travellers. The importance of rabies PrEP with all travelling patients to protect themselves from this disease. The compulsory PrEP schedule should be followed to control the disease. The cost of the vaccine should be pocket-friendly so that it would be beneficial to all the stakeholders.

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