

Rabies- a Fatal and Neglected Disease

For centuries rabies has been regarded as the “orphan disease” of underprivileged humanity. In Eastern culture and in the subcontinent particularly, rabies was perceived as a “curse” ordained by destiny, to be treated by mystics and mendicants, but inevitably ending in an agonizing, torturous death. Even today modern medicine has not changed mortality from rabies; and neither have public health authorities in many developing countries made serious efforts towards rabies prevention. The road to elimination is distant and needs serious, concerted effort. The WHO classifies rabies as a Neglected Tropical Disease (NTD).

Animal bites may be accidental and unavoidable, but awareness about immediate and correct action may make the difference between living and dying. Medical Microbiology and Infectious Disease Society of Pakistan (MMIDSP) and the hardworking team at The Indus Hospital (TIH) have made every attempt to spread information to the public to immediately wash the wound with soap and water, and reach a hospital where post exposure prophylaxis (PEP) is done correctly. TIH is the officially designated Training Center for Sindh.

The problems towards control of dog bite and rabies are manifold, the worst of them being poor understanding among physicians who encounter dog bites in the Emergency Department (ED).^{1,2,3} Victims are either under treated or over treated, both situations occurring because of insufficient training and application of WHO recommendations for PEP. There is irrational fear of using Rabies Immunoglobulin (RIG), as well as hesitancy over using intramuscular or intradermal schedules. ED doctors also consider PEP as being “too expensive to afford” for the patient. All these misconceptions would clear if health care givers take hands-on training from experienced institutions.

For decades, NIH, Pakistan produced and distributed the obsolete Sheep Brain Vaccine. After intense advocacy by activists, the offensive vaccine was finally discontinued in January 2016, and has been replaced with a cell culture vaccine. Small volume centers or EDs that only occasionally entertain animal bites should use the intramuscular regimen, while large centers are advised to employ the intradermal regimen, which is effective as well as cost effective.^{4,5,6,7}

Once symptoms of rabies have set in, death is predictable. Rare survivors have been reported, but there were exceptional circumstances. Counseling the family about impending death of their loved one can be an extremely emotional experience. Realizing the inevitability of death, most take their loved one home or for alternative care. If, on the other hand, the patient is admitted, invasive procedures should be avoided, and the patient should be cared for in a private, quiet, draft-free area. Management should focus on comfort care, with heavy sedation

(midazolam and thiopentone) and avoidance of intubation or life-support measures, which will only prolong the agony.⁸

Nearly 98% human rabies cases occur after dog bite; hence, it is safe to assume that in urban and rural areas of Pakistan dog is the reservoir for the virus. Stray dogs account for majority of bites in humans. Cries from animal rightists to desist from culling stray dogs in the city continue, warning authorities that this cruel method is not the solution to animal rabies elimination. This has been proven repeatedly in studies from countries in South America and in Asian countries. OIE advocates that if 70% dogs in a given perimeter are vaccinated, this will induce herd immunity and protect against human rabies. Reduction of dog population can only be done through neutering- a task that requires massive civic organization through local health authorities along with veterinarians.⁹ This practice has shown success in many cities around the world, and should be attempted in Pakistan if long-term measures are to be secured.

Intense discussions over the past year at meetings that this author has attended at WHO, are directed towards making PEP more affordable and convenient for the victim, while maintaining its safety and efficacy. For instance, there is now clear evidence that injecting the wound only with RIG, obviates the need to inject remaining RIG into a distant site into the muscle, so that RIG is not wasted. Shorter one-week schedules for PEP as well as for PrEP instead of the one-month schedule will encourage patient adherence without compromising on efficacy or safety. New published recommendations are due to follow soon.

Finally, it behooves every practicing medical doctor to learn and teach others about rabies prevention. Currently, a *One Health* approach is being advocated universally to control zoonotic diseases. *One Health* recognizes that the health of people is connected to the health of animals and the environment. The goal of *One Health* is to encourage the collaborative efforts of multiple disciplines-working locally, nationally, and globally-to achieve the best health for people, animals, and the environment. Rabies is one such affliction that should be targeted through this concept. MMIDSP should lead the way.

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