A glance at rabies pre-exposure and post-exposure prophylaxis for dog bites

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Sir,

The letter by Pokee N, Wiwanitkit V: Dog bite, immunoglobulin and pre-exposure vaccination Afr J Paediatr Surg 2015;12:100, is extremely interesting.

Pre-exposure prophylaxis (PrEP) has a role in decreasing the need for immunoglobulin injection, because the real problems with post-exposure prophylaxis (PEP) are the cost of the vaccine and immunoglobulin, as well as the availability of the immunoglobulin, especially in endemic areas, and if rabies is confirmed or the aggressor animal is not captured.[1] Although antibiotics have not been clearly shown to prevent infection after an animal bite, most physicians also suggest an adjunctive antibiotic prophylaxis for moderate or severe wounds. Such wounds include bites to the hand, head, neck, and genital region.[2]

We agree with the authors that the possible adverse effects of immunoglobulin are the issue that should be weighed in using this drug. However, second generation rabies vaccines, such as purified chick embryo vaccines and purified vero cells vaccines are safe, effective and cheaper than human diploid cell vaccine, and compared with the fact that rabies is fatal, vaccination side effects that occur are tolerable.[3]

According to the World Health Organization, rabies immunoglobulin (RIG) is available for <1% of patients for whom it is indicated in developing countries and globally for 2-5%, therefore, the risk of not being able to receive appropriate therapy in case of infection is extremely high.

We agree with the fact that PEP is an actual cost-effective strategy. However, it is particularly important to consider for each country and social setting the rate and cost of subsequent full PEP if unvaccinated. An adequate supply of PEP for bite victims is in fact restricted by the high costs of both human RIG (HRIG) and equine RIG (ERIG). Although ERIG is much less expensive than HRIG, it is still unaffordable in many parts of the world. The alternative to PrEP is to have prompt PEP, but when this is not immediately available, delay may render PEP ineffective,[4] whereas a single course of vaccination (five doses) gives protection that lasts a lifetime and three doses of cell culture vaccine are needed to ensure 100% seroconversion.

Moreover, the need for RIG can be avoided by the use of PrEP because previously vaccinated bite victims only need two booster doses with vaccine and do not need RIG.[5] We do not know each country's current situation concerning rabies prevalence and drug availability, but we suggest that this approach[5] could be considered for specific population groups such as infants and children living in areas with a very high incidence of dog rabies, and for travellers coming from wealthier countries.

We also suggest that monoclonal antibodies represent a promising alternative to traditionally used polyclonal products, and countries with chronic shortages of HRIG and ERIG would benefit greatly from replacement of these scarce and expensive polyclonal preparations.[5]

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Conflicts of interest

There are no conflicts of interest.

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