Rabies in South Africa: Where Do We Stand in 2015?

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To cite this article: Jacqueline Weyer (2015) Rabies in South Africa: Where Do We Stand in 2015?, Southern African Journal of Infectious Diseases, 30:2, 40-41, DOI: 10.1080/16089677.2015.1094233

To link to this article: https://doi.org/10.1080/16089677.2015.1094233

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Published online: 17 Sep 2015.

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Rabies. The word invokes divergent thoughts. Firstly, it is one of the oldest infectious diseases known to mankind with ancient scripts referring to the scourge of the rabid dog. Also the knowledge of how to control and prevent the disease has been understood for more than a century. Louis Pasteur showed how to prevent rabies virus infection by applying his crude nervous tissue vaccines in dogs and humans before the turn of the 20th century. Nevertheless, the question of why and how this highly fatal, but preventable, disease can still be considered one of the most formidable zoonotic diseases in the world today is a burning one. A recent study estimated the burden of rabies globally and the figures are staggering. It is estimated that approximately 59 000 human deaths can be attributed to dog-transmitted rabies, with the brunt borne in the developing countries of Africa and Asia. This statistic relates roughly to a human rabies death every 10 minutes. The estimated global economic loss exceed US $8.6 billion with a substantial contribution due to the cost of rabies vaccines and immunoglobulin for prevention of rabies in exposed humans.

In South Africa, dog rabies has been a public health threat for the past 50 years. Although reports of introductions of rabid dogs are noted throughout the colonial history of South Africa, the disease was only established in local dog populations in KwaZulu Natal Province during the 1960s. The outbreak was brought under control but after reintroduction of the virus to the Province in the 1980s, the disease has been rampant in dog populations of KwaZulu Natal and now also an increasing number of other localities in the Country. Dog rabies has been emerging in South Africa in the past decade with sizeable outbreaks of the disease reported from the Limpopo, Mpumalanga, Gauteng, Free State and the North West Provinces. Surveillance for rabies is considered poor in certain localities in South Africa, but current statistics report more than 77% of animal rabies cases from the Eastern Cape, North West, Mpumalanga and KwaZulu Natal provinces. The dog rabies affected Ehlanzeni district of Mpumalanga Province reports the highest density of rabies per square kilometre in the Country. The current situation is a confluence of inadequate dog rabies vaccine coverage in many areas which renders the dog populations susceptible to infection, and the spread of the disease from hotspots to other areas. This was illustrated with the introduction of dog rabies virus in the Vhembe district of Limpopo in 2004, an introduction that could be traced through molecular investigations to Zimbabwe. Rabies in dogs were not reported from this locality for more than two decades before this outbreak. Likewise, the dog rabies cycle in the Free State could be linked to viruses circulating in Lesotho, whilst the 2010 outbreak of dog rabies in Soweto could be traced to an introduction from KwaZulu Natal. It is therefore very clear that the entire South Africa, even areas that have not reported rabies historically and where dog rabies vaccination is expected to be a low priority, are vulnerable whilst the disease rages in certain foci in the Country and our neighbours also struggle to control the disease. Apart from rabies in domestic dogs, which is the major concern, the disease is also detected in cycles in black-backed jackal (Canis mesomelas), bat-eared fox (Otocyon megalotis) and mongoose species (the herpestid biovar of rabies). Incidental, dead-end spill over in various other wildlife species are noted, but with current surveillance efforts these appear to be rare, and also very few human rabies cases are linked to exposures to these animals. During the period, 2008-2013, a total of 304 bovine cases, 71 caprine and 26 ovine cases of rabies were recorded. Although the concern for human contact with such animals are obvious, it would also be insightful to understand the full breath of livestock rabies in South Africa and the consequent economic impact of the disease due to livestock losses. Global economic loss due to livestock deaths amounts to US $512 million per year. Further to these losses, the economic impact of the continued distribution and provision of human rabies post exposure prophylaxis (i.e. vaccines and rabies immunoglobulin) may also not be fully appreciated. In Shwiff et al, the average cost of rabies post exposure prophylaxis in KwaZulu Natal was calculated at US $64.50 for patients receiving vaccine only, and ballooned to US $333 with the provision of immunoglobulin. Furthermore the total cost of rabies post exposure prophylaxis in humans in South Africa is estimated conservatively at ZAR 70 million per annum. In contrast, vaccination of dogs in South Africa are calculated at less than US $7 per animal.

Control efforts in the Country have however not been without fruit. The disease in domestic dogs in KwaZulu Natal has receded significantly in recent years due to strategic ongoing efforts between the local stakeholders and international support through the Bill and Melinda Gates Foundation project. Likewise, efforts in Mpumalanga has seen a steady decrease in number of dog cases in the past three years. These cases clearly illustrates the feasibility of dog rabies control within the South African context. The tripartite of the FAO, OIE and WHO, is encouraging countries around the world to commit to
dog rabies elimination in the next few decades. This is a feat that has been accomplished by many developing countries, but progress from the developing world, as is the case with dog rabies elimination in Mexico, is encouraging. At the international meeting of the Pan-African Rabies Control Network (PARACON) held in Johannesburg in June 2015, participants from African countries have pledged to work towards dog rabies elimination by 2030. Considering the prevention of loss of human life but also economic impact of rabies in South Africa, strategic commitment to the elimination of scourge of the rabid dog by 2030 is certainly a worthwhile undertaking.

Acknowledgements

A kind thank you to Mrs Antoinette Grobbelaar of the NICD for proof reading the contribution.

Author declaration

The author has no commercial interest or associate which might pose a conflict of interest.

Funding statement

None to declare.

References