Hope for a rabies eradication strategy in Africa

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Most of the rabies virus circulating in dogs in western and central Africa comes from a common ancestor introduced to the continent around 200 years ago, probably by European colonialists. In the current issue of *Journal of General Virology* a team of scientists from Africa, USA and France report that within this common ancestry there are distinct subspecies at country level and that there is only limited movement of virus between localities. These factors mean that, if neighbouring countries collaborate, a progressive strategy to eliminate rabies from this area of sub-Saharan Africa is possible.

Rabies causes over 24,000 deaths a year in Africa, mostly in poor rural communities and of children. Rabies prevention and treatment are costly and the necessary resources often scarce or inadequate. Controlling rabies in dogs, the main agents of rabies spread, is therefore an important part of any rabies eradication programme.

The team analysed 182 samples of dog rabies virus from 27 African countries taken over a time period of 29 years. Their analyses showed that the samples were of two types, which they call "Africa 1" and "Africa 2" with different geographical distribution and history, indicating a clear distinction between rabies viruses circulating in North Africa and those circulating in West/Central Africa. It appeared that "Africa 2" was introduced into the eastern part of West/Central Africa - probably in Chad - around 200 years ago and from there spread over the whole region, moving westwards and southwards, over a 100-year period. This spread follows the pattern of French colonial expansion in

Africa. Distinct subpopulations of the virus exist in the different African countries and there is very little evidence that there is much movement of the virus among localities.

Dr Hervé Bourhy, from the Institut Pasteur in Paris who led the research said:

"Some scientists have suggested that rabies outbreaks in Africa might be caused by "superspreader" dogs, transmitting the disease over large distances. Our findings show that this is extremely unlikely as there is strong geographical clustering of the dog rabies subspecies and the time-scale for diffusion of the virus is measured in decades. Similarly, people transporting dogs, some of them eventually becoming infectious or in incubation, over this vast region does not seem to have had much, if any, impact on the spread of disease".

Chiraz Talbi, the researcher who carried out the analysis, added: "Rabies kills a patient, most often a child, every 20 minutes in Africa. By identifying the species of the virus that is the most prevalent and demonstrating how it spreads through the region, we have shown that, with collaboration, it should be possible for African countries to eliminate rabies by controlling dog rabies"

Source: Society for General Microbiology