Risk of T. solium Transmission from Pork Slaughtered in Western Kenya

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Abstract

The tapeworm Taenia solium has been identified as an important public health issue in Latin America, Asia and across much of Africa, although the nature of global travel and migration puts all countries at risk of infection. Ingestion by people of infective eggs or proglottids from a T. solium carrier, can result in the aberrant larval infection; cysticercosis, with a particularly high burden of disease being associated with infection of the central nervous system; neurocysticercosis.

Understanding the risks associated pork production, preparation and consumption as is currently undertaken in many parts of the developing world is the first step to mitigation of such risks, ensuring a safe and viable pig industry in these countries and reducing the risk of parasite introduction to currently unaffected countries.

A study in Western Kenya focused on determining the prevalence of T. solium in pigs entering the food chain and was complemented by an ongoing community cross-sectional study which determined the pork eating and preparation behaviours within the same study area. Data from these studies, supplemented by the literature was used to inform a food chain risk built as a stochastic decision model.

This risk assessment model indicates that a significant number of potentially infective pork meals are taken in any one year in Western Kenya, in turn placing the wider community at risk of acquiring a T. solium cysticercosis infection through environmental contamination with eggs and proglottids. The effect of three potential mitigation strategies were modelled; with the initiation of a pen-side diagnostic test for T. solium infections used in abattoirs being the most effective to reduce the number of infective meals taken in a year.