Newly Validated Blood Test for Pork Tapeworm in Humans and Pigs

A recent study published in the Journal of Parasitology validated and tested an antibody assay on blood samples collected from several regions in Morelos, Mexico, to estimate the prevalence of Cysticercosis, an infection caused by a pork tapeworm, in pigs and humans. Their findings will help authorities with strategic control strategies in the area.

LAWRENCE, Kan. (PRWEB) October 25, 2018 -- Journal of Parasitology – Cysticercosis is an infection of the brain, muscle and other tissues that is caused by the pork tapeworm Taenia solium. Tapeworm infections continue to impact human health and cause significant economic impacts on producers of animal products throughout the developing world. To know which control methods to deploy, the location and prevalence of cysticercosis must be assessed. A recent study validated and tested an antibody assay on blood samples collected from several regions in Morelos, Mexico, to estimate the prevalence of this infection in pigs and humans.

Authors of an article in the current issue of the Journal of Parasitology first tested a small set of blood samples from both cysticercosis-positive and cysticercosis-negative humans and pigs by using the enzyme-linked immunosorbent assay (ELISA). The assay was able to accurately detect anti-cysticercosis antibodies in both pigs and humans. Next, they used ELISA to test more samples across 4 regions and 20 municipalities in Morelos to estimate the prevalence of cysticercosis in the state. Anti-cysticercosis antibodies were found in 19.02% of the pig samples and in 8.39% of the human samples, a value that is higher than that of the infection rate reported in humans previously. The authors point out that their ELISA likely has a higher sensitivity than previously used methods.

The researchers also determined the risk factors for infection in Morelos. During blood collection, they recorded general information about the human donors and the pigs and their owners. They then used statistical models to determine whether there were any associations between those variables and antibody prevalence. Antibody prevalence in humans was linked with living in the rural, eastern region of Morelos and being marginalized, a socioeconomic measurement indicating a lack of access to resources. In pigs, anti-cysticercosis antibody prevalence was associated with free-range rearing and their owners having medium marginalization status living in the Sierra Huautla region. These results suggest that there is a higher cysticercosis infection risk for people living in rural areas with poorer social or economic conditions. The authors point out that improving pig rearing conditions could have an impact on reducing infections.

The authors conclude not only that ELISA is a suitable tool to test serum samples for cysticercosis but also that the results can be useful to estimate infection prevalence. They illustrated that cysticercosis infections are still prevalent in Morelos and estimated areas that may have high transmission. This information will inform authorities to where strategic control measures are needed.

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