Highlight 3: Improving Hospital Diagnostics for Human Brucellosis

Brucellosis is a debilitating disease that causes fever, pain, and weight loss, among other symptoms, in people. Highly contagious, brucellosis spreads from contact with infected animals or animal-sourced foods, particularly milk. The disease results in significant health and economic costs throughout parts of Africa, with the main burden ascribed to the long disease course when patients are not properly treated.

Because its symptoms are similar to those of other diseases, brucellosis can be hard to diagnose, requiring testing to do so. Yet A4NH researchers from the International Livestock Research Institute and partners found that the most commonly used test for brucellosis is highly unspecific and results in large numbers of false positives, and therefore significant overdiagnosis, of the disease in mixed farming communities in western Kenya.

Their research, published in the 2017 paper “Poor Performance of the Rapid Test for Human Brucellosis in Health Facilities in Kenya,” detailed diagnosis results for the febrile antigen Brucella agglutination test (FBAT) in comparison to other tests, such as the Rose Bengal Test (RBT), which is also inexpensive and easy to perform. In the study of 825 individuals, 162, or nearly 20 percent, tested positive for brucellosis using the FBAT, while only 8, or just 1 percent, tested positive with the RBT.

Overdiagnosis can have significant impacts. These include unnecessary costs for patients and the health systems treating them, as well as the misuse of antibiotics used to treat the disease, a significant concern at a time when there is growing worry over the emergence of drug-resistant disease strains. The researchers noted that while brucellosis remains an important disease to combat, improved diagnostics would lead to better targeting, ensuring that those who are infected get the treatment they need.

Based on the research, the authors recommended ensuring those testing, diagnosing, and treating possible brucellosis patients are better informed about who is at risk and receive better training. The authors also suggested using a different test to achieve more accurate results.

The findings quickly came to the attention of those working to improve prevention and control of the disease. In 2018, policymakers in Kenya used the research as they drafted a national plan of action for brucellosis control. The relationship between brucellosis and the production system is an important factor defining risk. Other parts of the country, such as semi-arid regions, certainly have much higher prevalence, but the issues of poor diagnosis remain throughout the region. The development of the National Strategy is an essential milestone in gathering livestock and human-sector support for the control of this disease, which is ranked in the top five most important zoonoses in the country. The National Strategy will then lead to a National Policy for Brucellosis Control.

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