Human cystic echinococcosis in South Africa

Authors:
Benjamin Mogoye[1]
Colin N. Menezes[2]
Martin P. Grobusch[2,3,4]
Kerstin Wahlers[5]
John Frean[1]

Affiliations:
[1]National Institute for Communicable Diseases, National Health Laboratory Service, South Africa

[2]Department of Internal Medicine, Chris Hani Baragwanath Hospital and University of the Witwatersrand, South Africa

[3]Institute of Tropical Medicine, University of Tübingen, Germany

[4]Department of Internal Medicine, University Amsterdam, The Netherlands

[5]Comprehensive Infectious Diseases Center, University Hospitals, Germany

Correspondence to:
Martin Grobusch

Email:
musoket@arc.agric.za

Postal address:
Department of Internal Medicine, Chris Hani Baragwanath Hospital and the University of the Witwatersrand, Faculty of Health Sciences, 7 York Road, Johannesburg 2193, South Africa

How to cite this abstract:
Mogoye, B., Menezes, C.N., Grobusch, M.P., Wahlers, K. & Frean, J., 2012, 'Human cystic chinococcosis in South Africa', *Onderstepoort Journal of Veterinary Research* 79(2), Art. #469, 1 page. http://dx.doi.org/10.4102/ojvr.v79i2.469

Note:
Proceedings of the Conference of the Southern African Centre for Infectious Disease Surveillance 'One Health' held at the National Institute for Communicable Diseases, Johannesburg, July 2011.

Cystic echinococcosis (CE) is caused by the tapeworm, *Echinococcus granulosus*. The tapeworms resides in the small intestines of canids and the lifecycle involves both intermediate and definitive hosts. Humans are accidental intermediate hosts. Cystic echinococcosis is an economically important infection constituting a threat to public health, and is considered an emerging disease around the world. There are at least 10 *Echinococcus* strain types (G1 – G10), each exhibiting diversity of morphology, development and host range. The epidemiology of CE is poorly understood in South Africa. A retrospective data analysis of the National Health Laboratory Service (NHLS) laboratory information system on echinococcosis serology, microscopy and histopathology results in eight provinces (excluding KwaZula-Natal) showed an overall positivity rate in submitted diagnostic samples of 17.0% (1056/6211), with the Eastern Cape (30.4%), North West (19.0%) and Northern Cape (18.0%) provinces showing highest rates. The data showed considerable variability between provinces. The review also showed that most proven cases were negative on serology, implying that the actual number of patients could be underestimated. To our knowledge, no data exist about the prevalent strains of *E. granulosus* and this prospective study will attempt to fill that gap. The aim is to genotype strains causing the disease in South Africa. Two different polymerase chain reaction (PCR) methods will be used to respectively target the 12S rRNA and *nad* 1 genes. To date, three samples have been genotyped as G1, G5 and G6; suggesting diversity of strains prevalent in the country, but more data is needed for a clearer picture.