

## e A case of leptospirosis in Mpumalanga Province

A recent case of leptospirosis was reported from the Mpumalanga Province, involving a 49-year-old previously healthy male, who was admitted to ICU of a private hospital following a week of flu-like symptoms, with a massive pericardial effusion and bilateral pleural effusions that required drainage. Blood results revealed a raised white cell count ( $17.69 \times 10^9/L$ ), raised CRP (277mg/L), and deranged liver functions (total bilirubin 52 mmol/L; conjugated bilirubin 32 mmol/L; ALT 75 IU/L; AST 63 IU/L.) TB PCR and bacterial culture of pleural and pericardial fluid were negative. His effusions were drained with a pericardial window and bilateral intercostal drains, and he was given intravenous meropenem and supportive treatment. However, two weeks after discharge, he presented again to the hospital with ongoing fever. On readmission he was again found to have a pleural effusion, and further elevated transaminases (ALT 184 IU/L; AST 116 IU/L). IgM antibodies to *Leptospira* species were found to be present. In response to the diagnosis of leptospirosis, he was treated with intravenous ceftriaxone. His clinical condition improved. He was discharged without further complications, and remains well, although weak.

On further questioning following the diagnosis of leptospirosis, no apparent exposure to rodent urine was identified. The patient is an owner of an urban security company and his work is mostly office-based. He does not participate in any adventure sports and did not report any social or employment activities that would place him at greater exposure to animal and/or waste products.

This case of leptospirosis with massive pericardial effusion and bilateral pleural effusions is unusual. The usual pulmonary manifestations of leptospirosis include haemoptysis secondary to systemic vasculitis or acute respiratory distress syndrome. Typically this presentation occurs in conjunction with highly deranged liver and renal functions that, in the absence of aggressive supportive therapy may lead to multi-organ failure and even death. However, varying degrees of pleural effusion are described in a number of case series of leptospirosis. Cardiac manifestations of leptospirosis include cardiomegaly, and arrhythmias secondary to a myocarditis.

Leptospirosis is a zoonosis present in many regions of the world. The global burden is estimated at approximately 1.03 million cases annually, that result

in a total of 2.90 million DALYs (Disability Adjusted Life Years) lost per annum. Over 80% of cases are found in the tropical regions of South and South-East Asia, Western Pacific, Central and South America and Africa. In South Africa, reported cases are observed sporadically with the most recently described cases published through the NICD Communiqué in June and September 2015.

*Leptospira* species are maintained in the environment through kidney infection of many wild and domestic reservoir animals including rodents. Transmission to humans is a chance occurrence, commonly as a result of a person coming into contact with urine of animals that have been infected with the bacteria, either directly or indirectly (wet soil or waste contaminated with leptospires). In the majority of cases, leptospirosis is a self-limiting illness, typically manifesting with non-specific fever and malaise. However a small proportion of cases may lead to multi-organ involvement failure. Clinical presentation includes an acute febrile illness with headache, myalgia, anuria or oliguria, jaundice, cough, haemoptysis, haemorrhages, cardiac arrhythmias or skin rash. Confirmatory lab investigations include a positive test for antibodies such as an IgM ELISA, positive blood culture or culture of clinical specimen (such as sputum and urine.) PCR detection of *Leptospira* species may be positive within the first week of illness. Early treatment improves clinical outcomes.

### Further reading

1. Gulati, S and Gulati, A. Pulmonary manifestations of leptospirosis. 2012, Lung India: Official Organ of Indian Chest Society, pp. 347 - 353.
2. Matos, ED, *et al.* Chest radiograph abnormalities in patients hospitalized with leptospirosis in the city of Salvador, Bahia, Brazil. 2001, Brazil Journal of Infectious Disease, pp. 73-77.
3. Torgerson, Paul R, Hagan, Jose E and Costa, Frederico. Global burden of leptospirosis estimated in terms of Disability Adjusted Life Years. 10, 2015, PLOS Neglected Tropical Disease, Vol. 9.

**Source:** Division of Public Health, Surveillance and Response, NICD-NHLS; (outbreak@nicd.ac.za)