

## Abstract

Visceral Leishmaniasis or Kala-Azar is a chronic systemic disease characterized by fever, weight loss and weakness and, if left untreated, death. Diagnosis of KA is by direct visualization of the parasites in a culture medium or in host tissue; or by serological demonstration of antigen nuclear material or antigen-antibody reaction by way of a variety of laboratory tests. The research was a determination of technical efficiency of two most commonly used laboratory tests for screening and diagnosing Kala-Azar (KA) in Wajir County in North Eastern Province of Kenya in the year 2008 by way of a cost-effectiveness analysis. These tests were Direct Agglutination Test (DAT) and a rapid dipstick test called rK39™. The rK39, at the time of the study, was not recognized by Ministry of Health because there was inadequate information on its performance in the Kenyan context. However, in Wajir, rK39 was more available than DAT. Additionally, DAT was cumbersome to use in Wajir as it required that specimens be shipped to Nairobi where the actual testing was done. Hence, there was the need to recommend a diagnostic kit that was cost effectively suitable for use in Wajir. The study therefore sought to conduct cost effectiveness analysis on the use of DAT and rK39 as diagnostic kits for KA in Wajir, Kenya. A hospital-based, cross-sectional descriptive study was done. Quantitative secondary data of newly suspected Kala-Azar cases seen in Wajir County Hospital and subjected to both DAT and rK39 and splenic aspiration in the year 2008 was collected using specific data collection forms. Collected data comprised the study subjects' Kala-Azar (KA) test results and monetary costs related to KA testing using DAT and rK39 tests. Data was analyzed using the computer based statistical software Statistical Package for Social Sciences (SPSS) version 14. A cost effectiveness ratio was calculated as the cost per morbidity averted relative to the obligatory morbidity associated with the absence of correct diagnosis and treatment of KA. Ease of test performance calculated as number of test steps and the requisite skills and equipment was used as adjunct measure of test suitability for Wajir. The study found the average cost-effectiveness ratio of DAT was 812 while that of rK39 was 57. The rK39 test was therefore found not only effective but also more cost effective and easier to perform compared to DAT. These findings correlated well with findings of other DAT and rK39 cost and effectiveness studies done in East Africa, Asia and South America where KA is endemic. The study thus recommended rK39 test for adoption by Ministry of Health as first line screening test for Kala Azar in Wajir. It was also recommended that more studies of the prevalence of KA in Wajir and other regions of Kenya be done so that tests for KA can be segregated by regional predictive value.