Dissertation submitted as partial fulfilment of the requirements for the degree of the Master in International Health (MIH)

# Visceral Leishmaniasis in Uganda: Diagnostic Predictors and Risk Factors for Death

Yolanda Mueller

June 2007

Swiss Tropical Institute
University of Basel
Switzerland

## Summary

Visceral leishmaniasis (VL) is a protozoal disease estimated to affect 500 000 persons every year worldwide. In sub-saharan Africa, VL caused by *L. donovani* is endemic in remote regions of Sudan, Ethiopia, Kenya, and Uganda. In Uganda, the disease is not part of the routine national data collection systems and thus tends to be neglected by the central and district health authorities.

In Amudat, eastern Uganda, Médecins Sans Frontières (MSF) started a VL project in 2000. Clinical data were collected as part of the project monitoring for every VL suspect patient. We analysed the data collected between 2000 and 2005, first comparing confirmed VL cases with VL-suspects with another final diagnosis to identify diagnostic predictors of VL. Secondly, we studied risk factors for in-hospital mortality among VL cases.

During the 6-year period, 3483 patients with suspect VL presented to Amudat Hospital. For the analysis of clinical predictors, we compared 1858 confirmed first time VL cases and 1389 non-VL cases. VL cases had a median age of 12 years and 69% (1283 cases) were males. In the multivariate analysis, we identified female sex to have an increasing protective effect with age. There was some evidence that a distant location of stay from hospital, anaemia, and a very enlarged spleen were predictors of VL.

We observed a case-fatality rate of 3.7% (68/1858) in confirmed VL cases. In the multivariate analysis, age below 6 and above 15 years, tuberculosis, hepatopathy, drug-related adverse events, and, to a lesser extent, female sex and a much enlarged spleen were associated with increased mortality.

Our data show that clinical or para-clinical characteristics are not reliable enough to diagnose VL and that a specific diagnostic test is needed. Overall, the case-fatality rate observed in our cohort was low compared with other reports from VL treatment in Sub-Saharan Africa. Some subgroups of patients are at an increased risk of dying during treatment and may benefit from an increased surveillance or less toxic drugs.