

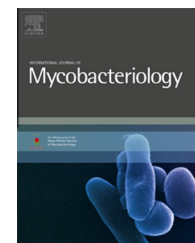
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Tuberculosis at post-mortem in inpatient adults at a tertiary referral centre in sub-Saharan Africa – A prospective descriptive autopsy study

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ABSTRACT

Background: The World Health Organisation (WHO) estimates that 3 million cases of tuberculosis (TB) are missed every year. Identification and treatment of these are critical to achieving global TB control. Patients with sub-clinical TB, extra-pulmonary TB, and drug-resistant TB are difficult to diagnose and may be missed at all points of healthcare. An autopsy study was conducted to ascertain the burden of TB at post-mortem in adults who died in the inpatient general medical wards at a tertiary care referral center in Lusaka, Zambia.

Methods: Complete whole body autopsies were performed on 125 adult inpatients. Pathological examination involved two stages: (1) Gross pathology was recorded, and samples were taken from all organs for histopathology and cryopreservation; and (2) Histopathological examination of tissue after appropriate staining. Specific pathology and diseases identified on examination were recorded. Lung tissues were processed using the GeneXpert MTB/RIF Assay. Primary outcome measures were specific diseases stratified by HIV status. Secondary outcomes were missed TB and drug-resistant TB cases.

Findings: Of 125 adults, median age 35 years (IQR: 29–43), 80 (64%) were male and 101 (80.8%) were HIV-positive. Tuberculosis was the most common finding at autopsy with 78/125 cases (62.4%), of which 66/78 (84.6%) were HIV-infected. There were 35/78 cases (44.9%) with extra-pulmonary TB, the odds of which were higher among HIV-infected cases (aOR 5.14 [95% CI: 1.04–25.4], $p = 0.045$); 25.6% (20/78) of the TB cases were not diagnosed ante-mortem; and

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13/78 (16.7%) of the TB cases had undiagnosed MDR-TB. Other autopsy findings included: pyogenic pneumonia 36.8% (46/125); bacterial meningitis 7.2% (9/125); cardiac failure 7.2% (9/125); and malignancies 8.8% (11/125). Prevalence of HIV did not differ between TB and non-TB cases (84.6% vs. 74.5%; $p = 0.163$).

Interpretation: TB remains an important cause of death in adult inpatients. A substantial number of inpatients with TB and MDR-TB are not diagnosed by the current cascade of healthcare. Inpatient settings in high TB endemic countries should be included in WHO 'high risk' groups, and heightened clinical awareness and more proactive screening for TB and MDR-TB in all inpatients should be required.

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