

ABSTRACT

Tuberculosis still remains one of the world's deadliest curable disease. Emergence of HIV, multi-drug resistance (MDR), high prevalence of post-treatment tuberculosis are some of the major setbacks which now poses a major challenge to attainment of tuberculosis control programme targets of 70% detection of infectious tuberculosis and 80% cure rate of detected cases. Despite the availability of effective anti-tuberculosis and ant-retroviral (ART) drugs, high incidence rate of approximately 9-11% of recurrence continues to be observed in Kisumu and Siaya county hospitals. The risk factor for recurrence in this area is poorly documented. To reverse this condition, new intervention mechanisms are needed but must be based upon sound epidemiological data derived from this community. Recurrence is often associated with weak health systems, poor treatment outcomes and MDR. Available data on predictors for recurrence yield conflicting information about whether socio-economic factors, lifestyle and immunosuppression increase the susceptibility of recurrence or not. Therefore, the aim of this study was to determine the predisposing factors associated with recurrence. This was a hospital based cross-sectional study where data were collected from both out and in-patients suffering from tuberculosis in Ahero, Kisumu, Bondo hospitals and Jaramogi Oginga Odinga Teaching and Referral Hospital. Between April 2014 and January 2015, 227 TB participants were enrolled. TB patients were approached from the chest clinic where they were briefed about the study. Upon consenting, a semi-structured questionnaire was completed from eligible participants. Predictors such as medical information, lifestyles and socio-economic characteristics were collected from eligible participants. Information captured was entered into an Access database and analyzed using STATA at CI of 95% and $p \leq 0.05$ level of significance. Chi-square test was used to analyze the proportion of recurrence and logistic regression was used to establish any existing associations between recurrence and predictors. Median age was 33 (IQR 26-40), 55% were male. HIV prevalence was higher among recurrent vs. incident TB cases (80% vs. 65%, $p=0.02$). Coverage of ART was higher among those with recurrent vs. incident TB (95% vs. 82% $p=0.005$). Recurrent TB was associated with older age (OR 1.05/per year increase, 95% CI: 1.01-1.09), male sex (OR 2.28, 95% CI: 1.06-4.87), HIV (OR 2.47, 95% CI: 1.18-5.19). There was less household crowding among those with recurrence (OR: 0.78/per household member, 95% CI: 0.64-0.96). Smoking, low weight, alcohol use, employment, were not associated with recurrence. The proportion of TB-HIV co-infection observed in this study was much higher compared to national rate. In conclusion, high prevalence of HIV infection among recurrent patients despite high coverage of ART observed in this study underscores the importance of developing new approaches on fighting against tuberculosis. There is need for further studies on ARV to determine whether ART adherence and resistance are associated with poor outcome in settings where uptake of HAART is high among tuberculosis patients.