## Abstract

About 22.9 million people living with HIV/AIDS reside in sub-Saharan Africa, many of whom have progressed to AIDS over time. Kenya has high numbers of new infections; a total of 104,000 in the general population with paediatrics at 13,000 and adults at 91,000. Risk scores constructed using prognostic factors may be valuable in the early identi_cation and intervention to patients at risk of progression to AIDS. There was therefore a necessity to come up with robust risk models that use a limited number of easily available factors. The main objective was to come up with a risk score utilizing routine care data which can be easily applicable in a clinical setting to asses for risk of AIDS among HIV infected patients. It was a prospective cohort study done using 2 year follow-up (initiated on Highly Active Antiretroviral Therapy (HAART)) between 1st of June, 2010 and 30th of May, 2011) data from 1454 HIV/AIDS on ART care and treatment. Age, sex, marital status, CD4 cell count, haemoglobin level, BMI, prior TB medication and whether or not patients were currently receiving any ART was modelled to describe the short term risk of new AIDS event. Flexible parametric survival regression analysis (Royston Parmar) was used instead of Cox-PH regression. Strong predictors of progression were Body Mass Index, haemoglobin, World Health Organization staging and Tuberculosis treatment prior to HAART initiation. The study was able to develop a two group risk categorization based on the risk model developed. The discriminative ability of the model was moderately strong (Harrell's c-index of 0.69). The rate of progression to AIDS between the high and low risk groups was well de_ned. The rate of progression was 0.38 and 0.93 per thousand person-years of followup for the low risk and high risk groups respectively which was more than twofold risk of progression to AIDS among high risk group, (HR= 2.47 95% CI: 1.66 - 3.69; p <0.001). This study developed a prognostic risk score model to be utilised in the early identi_cation and intervention to patients at risk of progression to AIDS.