

Impact of Xpert® MTB /RIF assay on MDR-TB treatment success rates in Ugu District, Kwa Zulu Natal South Africa

Student: Tamirashe Christopher Mahwire

Supervisor: Dr Naidoo

Setting: Xpert®MTB/RIF assay rapidly diagnoses rifampicin resistance enabling early initiation of second line TB treatment. However, the impact of an earlier MDR-TB diagnosis on treatment outcomes is unknown.

Objective: To compare MDR-TB treatment outcomes in cases diagnosed with smear/culture and with Xpert®MTB/RIF.

Design: A retrospective cohort study with cohorts defined by the diagnostic assay used in the presumptive TB cases. Data were extracted from MDR-TB registers at Ugu District MDR-TB Unit from January 2012 to April 2014. Treatment outcomes were assessed after two-years for those completing treatment or at recorded end-points.

Results: A total of 820 cases were identified and 718 enrolled into study. Mean age was 34.8 years in smear/culture and 35.0 years in Xpert group. HIV prevalence was 76.3% and 78.2% respectively. Treatment success rates were 54.0% and 45.2% respectively ($p=0.02$). In the multivariable regression analysis Xpert diagnosis ($OR=0.47$, $p=0.02$), male gender ($OR=0.57$, $p=0.02$) and age ($OR=1.02$, $p=0.05$) were associated with treatment success. Median time to treatment initiation was reduced from 2.06 (IQR 1.3 to 2.93) to 0.37 (IQR 1.3 to 2.93) months in the Xpert-group.

Conclusion: Despite rapid treatment initiation, MDR-TB treatment success rates were poorer in those diagnosed with Xpert®MTB/RIF assay. Additional studies are required to assess possible factors influencing outcomes.