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Effects of introducing Xpert MTB/RIF test on Multi-drug resistant tuberculosis diagnosis in KwaZulu-Natal South Africa

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Background: South Africa has the highest incidence of TB in the world which the world health organization estimated to be 860 per 100 000 in 2013. Compounding the problem of TB is the high co-infection with HIV and the increasing drug resistance. This led to the introduction of Xpert MTB/RIF test (Xpert) in 2011 to improve the diagnosis of TB and detection of drug resistant TB. The guidelines recommend treatment of all Xpert rifampicin resistant patients as MDR-TB cases while awaiting confirmation by phenotypic or genotypic drug susceptibility testing. This study evaluates how the Xpert has influenced the diagnosis and management of drug resistant TB in the highest burdened district of KwaZulu-Natal Province.

Methods: Data was retrospectively collected from all patients with rifampicin resistance on Xpert performed between March 2011 and April 2012. Xpert results were compared with those of phenotypic and/genotypic drug susceptibility testing. Patients' medical records were used to determine the time to treatment initiation.

Results: Out of 637 patients tested by Xpert, 50% had confirmatory results, of which a third were sent on the same day as Xpert test. The rate of rifampicin discordance and monoresistance was 8.8% and 13.4% respectively and there was no difference between phenotypic and genotypic confirmation. Among those who had been initiated on treatment, 28%, 40%, 21% and 8% of patients commenced within 2 weeks, 1 month, 2 months and 3 months of Xpert testing respectively, while the remaining 3% were observed without treatment.

Conclusion: This study emphasizes the importance of complying with the guidelines in confirming all Xpert rifampicin resistant cases so as to ensure proper management of these patients. Despite having a rapid diagnostic tool which can generate results in a few hours, system associated challenges continue to result in delays in treatment initiation

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