

The Role of Gene Xpert Testing

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Background

Gene Xpert testing identifies *Mycobacterium tuberculosis* DNA and rifampicin resistance. The 2012 Namibian Guidelines for Tuberculosis Management state it should be used if there is clinical suspicion of tuberculosis, but initial sputum smears are negative. During the 2014/15 National Tuberculosis Drug Resistance Survey, it was performed on all specimens. During this time, the number of cases diagnosed at the Lifeline Clinic increased. And then fell after survey completion.

This study was performed to determine how many extra diagnoses were made due to the use of Gene Xpert testing.

Methods

Between 1/7/14 and 9/6/15 Gene Xpert testing was performed on all sputum samples submitted to Gobabis hospital. The records of these samples were reviewed, the number of specimens recorded, and the number of positive results obtained. Positive results were divided into those that would have been established by microscopy, and those only confirmed due to Gene Xpert use.

Results

2067 sputum samples were analysed. 1678 (81%) were negative. 35 were invalid. 354 tuberculosis diagnoses were made.

223 (63%) of these positive results would have been established without use of Gene Xpert. However, 131 patients (37%) were diagnosed only because Gene Xpert testing was positive (microscopy was negative). Figure 1 shows the diagnostic method in more detail, and the high proportion benefitting from Gene Xpert use.

Conclusions & Recommendations

131 additional patients were diagnosed. They received prompter treatment, with an associated reduction in morbidity and mortality.

Extrapolating these numbers nationally, using Gene Xpert earlier could result in the prompt diagnosis of tuberculosis in an additional 6600 patients each year.

This study confirmed the benefit of Gene Xpert testing to establish a TB diagnosis, as well as in identifying drug resistance. We recommend that its position in the diagnostic process is reviewed, utilising it earlier and more frequently than currently.

