Abstract

Evaluation of Drug-Resistant Tuberculosis Surveillance System Before and After Implementing Genexpert in Morocco, 2007-2016

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Abstract

Background: Drug-resistant tuberculosis (DR-TB) is a serious problem in the fight against tuberculosis worldwide. WHO has been actively encouraging countries to establish continuous DR-TB surveillance systems based on routine drug susceptibility testing (DST). In Morocco, a DR-TB surveillance system was implemented to monitor and to control epidemiology of Multidrug-resistance TB (MDR-TB). Genexpert for Rifampicin resistance detection was introduced in 2012, to scale up of national surveillance system.

Objective: Our study aims to evaluate DR-TB surveillance system before and after implementing Genexpert.

Methods: This is a retrospective descriptive study with a quantitative approach, to assess the data quality, sensitivity (ability to detect MDR-TB cases compared to cases estimated from national MDR-TB survey) and the PPV of the surveillance system, using data reported from 2007 to 2016 and laboratory results for Genexpert and Conventional DST, as gold standard, to validate the data collected.

Results: 1063 DR-TB cases confirmed reported from 2007 to 2016, among them 92% were MDR-TB. The missing data for the variables assessed represented 11%. It was important for DST results (32%) and treatment outcomes (34%). The sensitivity of DR-TB surveillance system was low (17% on average) before introducing Genexpert (2012) and reached to 70% since 2015. In 2016, the sensitivity was 100% for detection of MDR-TB among patients previously treated for TB and 29% among new TB patients. The PPV of DR-TB surveillance system was 34% before introducing Genexpert (2012) and reached to 99% in 2016.

Conclusions: The current DR-TB surveillance system based on active case detection was satisfactory for data quality, sensitivity, and PPV. This is related to introduction of Genexpert since 2012. It's recommended to strength MDR-TB detection among new TB cases using Genexpert and to maintain MDR-TB detection among patients previously treated for TB to improve the sensitivity of the DR-TB surveillance system in order to establish continuous DR-TB surveillance system.

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