

Abstract

Background: Sputum examination is an important diagnostic tool in diagnosis of pulmonary tuberculosis. Besides, the counts of bacteria could also be used as an proxy of infectivity. From the point of view of tuberculosis disease management, conversion to negative of sputum smear result is also an important indicator of successful treatment.

Objectives: First, to determine the indicators of quality of sputum examination for disease manager through questionnaire interviews and focus groups. Second, to illustrate the changes of these indicators through 2001 to 2003 in Taiwan. Third, to examine the associated factors related to these indicators. Forth, to apply these indicators to evaluate the quality of sputum examination among different health bureaus and hospitals.

Methods: We used the notification data of the year 2001 through 2003 from Center for Disease Control of Taiwan. We calculated various indicators of sputum examination quality which included non-sputum examination rate, reported rate, sputum smear positive rate, culture rate for sputum positive cases, reported rate for culture examination, negative culture rate among sputum positive cases. Different indicators were analyzed by hospital level, age, sex, bureau, county and hospital. Questionnaire and interview were done to understand the reasons of no sputum examination.

Results: We found that about one tenth of notified cases did not have any sputum examination and the rate was the same in recent three years and especially high among young people. The proportion of examining both types of sputum examinations increased but the report rate decreased. A decrease of sputum smear positive rate was noted. The culture rate for sputum positive cases increased, nevertheless, the report rate for culture examination decreased. Negative culture rate among sputum positive cases decreased through years. Large variations across different counties and hospitals were noted for different indicators.

Conclusions: Different indicators of quality of sputum examination refer to different aspect of the problem, which included the physicians'problems of no prescription of examination, patients'problems of no return the specimen and poor collection skills, technicians'problems of poor reading ability and reporting system. Through these kinds of study will help us to identify the deviant groups for further investigations.

Keywords: pulmonary tuberculosis ; sputum examination ; sputum smear ; sputum culture