Factors Associated with Delayed Management of Smear-positive Pulmonary Tuberculosis in Hospitalized Patients

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Abstract

Background: Tuberculosis (TB) is a major communicable infectious disease and nosocomial transmission is a great concern. Patients with smear-positive pulmonary tuberculosis (PTB) are the most infectious. The study is aimed to describe the risks factors for delayed management in patients with newly diagnosed smear-positive PTB.

Methods: The information was retrospectively collected by detailed chart review. The patients were categorized as having typical TB-related symptoms. Chest radiography findings was considered typical if lesions found at upper lobes, with cavitatory or miliary lesion. The various time intervals were recorded: admission to ordering of AFB/FLU test (doctor delay), ordering of the first AFB/FLU test to receipt of specimens by the lab (collection/transportation delay), receipt of specimens to report of the result to the doctor (laboratory delay), receipt of specimens to report of the result to the isolation (facility delay), assessment of the result to TB medication (facility delay), isolation or no treatment (facility delay).

Results: A total of 466 patients with newly diagnosed smear-positive PTB in 5-year periods (2003-2007) were included, with mean age of 69.7 years. Doctor delay was the major cause of delay to management comparing to collection/transportation delay and laboratory delay (43.2 vs. 16.8 vs. 26.4 hours, p<0.005). Factors associated with doctor delay were female (+21.7 hours, compared with male) and malignancy (+38.2 hours compared with patients without malignancy). Typical chest radiography findings was a protective factor that saved 33.2 hours earlier than atypical findings. The laboratory delay was associated with the weekdays. Delay in reporting results of acid-fast stain testing was noted in Friday (+7.8 hours) and Saturday (+13.4 hours) with Thursday as the reference.

Discussion & Conclusions

1. The consequence of delays in management of PTB smear-positive patients encompassed several aspects, including increased of exposure threat to health care workers, increased severity and mortality of TB patients, increased expenses by both patient and health care system due to unresolved symptom, and TB impacts productivity of patients due to marginalization from work.

2. As our study unfolds the factors influencing the time delay in managing inpatient TB cases, we are prompted to seek a solution for the hindrance faced by health care system.

Conclusion: Delay in management of patients with tuberculosis in the hospital is a critical issue. Evaluation of the factors associated with delayed management may help to refine the control policy for tuberculosis in the hospitals. The study revealed patients who were female, with underlying malignancy and atypical findings on chest film may be at risk for delayed management. An uninterrupted laboratory service for management of specimens for the diagnosis of tuberculosis is also important as the data in our study showed that delays occurred in the weekend.