Original Paper

Evaluation of factors associated with time to sputum smear conversion in smear-positive pulmonary TB patients in Golestan province, Iran (2009-14)

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Abstract

Background and Objective: Tuberculosis caused by *Mycobacterium tuberculosis* is one of the deadliest infectious diseases in the world. The amount of the bacilli in tuberculosis will reduce rapidly by starting effective antibiotic treatment and the remained bacilli in the sputum will be an important scale to respond to treatment. This study was conducted to evaluate the examin factors associated with the conversion of positive smear to negative one in tubercular-pulmonary patients in Golestan province, in northern Iran.

Methods: This retrospective cohort study was carried out on 2093 patients with smear positive pulmonary tuberculosis registered in Golestan province, northern Iran from March 2009-14 referred to health centers. The outcome of this study was to determine the time of changing to negative of the first smear during the treatment and evaluating its relationship with demographic variables, the density of bacilli in the smear, culture, chest x-ray, diabetes and HIV.

Results: 67.5% of patients among 2093 smear-positive pulmonary tuberculosis patients were conversion rate of smear at the end of the second months. Results of Cox model showed relationship between gender, age, weight, density bacillus smear and culture results at the start of treatment and negative smears($P<0.05$). Old age, low weight, high density of bacillus in primary smear in the beginning of treatment and increasing of the number of colonies in culture of positive smear patients were considered as predictor factors in changing positive smear to negative one.

Conclusion: This study revealed that Conversion rate and treatment success in Golestan province was less than what was expected.

Keywords: Tuberculosis, Sputum smear, Time Sputum conversion

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