

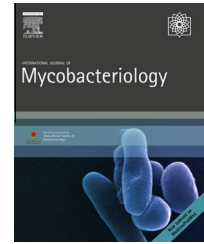


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Full Length Article

The pattern of tuberculosis in Aswan Chest Hospital, Egypt

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ABSTRACT

Objective/background: Tuberculosis (TB) is a major health problem. The aim of this study was to examine the pattern of TB in Aswan Chest Hospital, Aswan, Egypt.

Methods: This cross-sectional study was carried out using medical records from the TB registry in Aswan Chest Hospital. The investigated variables included demographic characteristics, type of TB infection, and affected organs. All data were coded and statistically analyzed.

Results: The average age of the 557 patients infected with TB was 40.31 ± 18.87 years; 58.2% of the cases were men and 41.8% were women. In both sexes, the highest number of TB patients was from the reproductive age groups. During the 5-year study period, the highest percentage of cases were new cases and the highest frequency of cases was during 2011 and the lowest frequency was during 2015. Pulmonary TB cases showed a sharp decline; however, there was a decrease in extrapulmonary TB cases during 2012 and 2013, with a slight rise in 2014 and 2015. Of the pulmonary TB cases, 82.5% were smear-positive TB.

Conclusion: There was a decline in the total number of TB cases across the studied years and the most studied cases were pulmonary smear-positive and new cases. Younger people represented a large percentage of reported cases.

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Introduction

Tuberculosis (TB) is a contagious bacterial disease [1] that is a major public health problem worldwide. In 2014, there were

an estimated 9.6 million new TB cases. More than 90% of new TB cases and deaths occur in developing countries [2]. Egypt has massively engaged in early case detection, provision of adequate chemotherapy, and prevention of

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transmission to new cases [3]. The prevalence rate of TB in Egypt was 26 per 100,000 people according to the World Health Organization estimate in 2014, while the incidence rate was 15 per 100,000 people. Screening, diagnosis, notification, and registration of TB cases were implemented all over Egypt according to the National TB Strategy of the National Tuberculosis Control Program (NTP) [4]. One of the registration sites is Aswan Chest Hospital, Aswan, Egypt where the current study was conducted. Aswan city lies in the Upper Egypt sector in the south of Egypt; it has 1425738 inhabitants according to the 2015 report [5].

The objectives of this study were to assess the TB pattern and to provide an insight into the type of TB infection in Aswan Chest Hospital.

Methods

This was a hospital-based cross-sectional, retrospective study involving a record review of patients with TB notified, registered, and treated in Aswan Chest Hospital.

We analyzed TB cases reported from January 1, 2011 to December 31, 2015. The diagnosis of TB in Aswan Chest Hospital is made in line with the National Egyptian TB Control Program Guidelines of the Ministry of Health (NTP). Cases were categorized by major disease site, reported as either pulmonary TB (PTB) or extrapulmonary TB (EPTB). The PTB group comprised cases with PTB that were either sputum smear positive or sputum smear negative according to a sputum smear examination. If three successive samples of sputum smears were negative twice and chest radiography was compatible with active PTB, the patient was diagnosed as smear-negative PTB after discussion by expert committee including a clinician and a radiologist; or if acid fast bacilli were detected by other means, for example, bronchoalveolar lavage. If the patient had a local extrapulmonary lesion with symptoms compatible with TB, a positive purified protein derivative test was performed and other diseases excluded and if a biopsy from the lesion was positive for *Mycobacterium tuberculosis* or had caseating granuloma, a diagnosis of EPTB was made. The EPTB group comprised any extrapulmonary disease site: pleural, lymphatic, bone and/or joint, genitourinary, meningeal, peritoneal, and few cases including eye, breast, and pericardial TB reported as “other”. However, there were some unclassified EPTB disease sites listed as “unknown” [6]. Anti-TB therapy was also recorded and patients are categorized as either new or previously treated cases according to the patient’s history. Anti-TB treatment is provided for free and according to standardized regimens of NTP (Regimen I for new cases and Regimen II for retreatment cases). Treatment for new PTB patients consists of an initial phase of rifampicin (R), isoniazid (H), pyrazinamide (Z), and ethambutol (E) or streptomycin given daily for 2 months followed by a continuation phase of R and H daily for 4 months. Retreatment patients are given a standard retreatment Regimen II (SHRZE for 2 months, HRZE for 1 month, then HRE for 5 months) [4]. Patients with EPTB are treated for varying lengths of time, depending on disease severity and treatment response. Monitoring the response to therapy was done according to the National Guidelines of NTP, using TB patient

registers, TB treatment cards, and files to record and report on patient information.

All patients registered with TB in Aswan Governorate between January 1, 2011 and December 30, 2015 (5 years) were included in the study. Data were obtained from TB patient registers and TB treatment cards in TB clinics.

Statistical analysis

Data were collected into a paper form by authors. Data were fed to the computer as an EXCEL sheet (Microsoft Corporation, Redmond, WA, USA), and were validated and analyzed by SPSS program version 15 (SPSS Inc., Chicago, IL, USA). Descriptive analysis was performed. Comparisons were made between variables using the chi-square test and 95% confidence intervals where appropriate. A chi-square test was used to evaluate differences in proportions. The Student t test was used for mean comparisons. Comparisons at $p < .05$ were considered significant.

Ethical approval

Ethics approval to use, report, and publish the collected data was obtained from the Ministry of Health, Egypt. Patient information was anonymized and deidentified prior to the analysis.

Results

Between January 1, 2011, and December 31, 2015, among 551,440 cases attending Aswan Chest Hospital, the Epidemiology Service of Aswan Chest Hospital was notified of 557 cases of TB (Table 1).

All cases received therapy through directly-observed therapy short course (DOTS) with either observed or packed doses to be received at home.

The highest frequency of cases was during Year 2011 and the lowest frequency was during Year 2015 (Fig. 1).

There was a decline in the total number of cases across the studied period: PTB cases showed a sharp decline in 2015; however, there was a decrease in EPTB cases during 2012 and 2013 with a slight rise in 2014 and 2015 (Fig. 1).

There were 557 patients with TB. Men outnumbered women and 47.76% of patients were from urban areas and 52.24% were from rural places. Higher numbers of affected

Table 1 – Number of tuberculosis cases from 2011 to 2015.

Y	Frequency	%
2011	125	22.4
2012	118	21.2
2013	108	19.4
2014	113	20.3
2015	93	16.7
Total	557	100.0

Note: Y = year.

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