



## Atypical Presentations of TB – A Diagnostic Challenge of Tuberculosis in a Community Hospital

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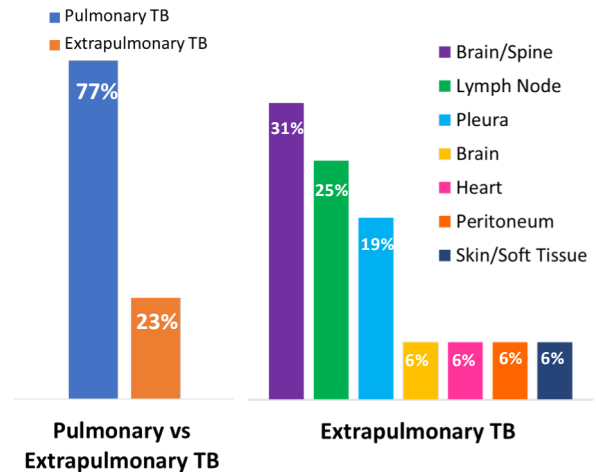
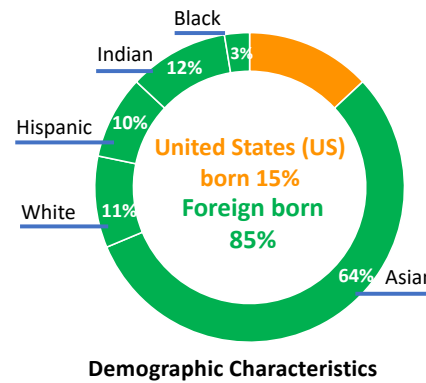
**Background:** Tuberculosis (TB) is an infectious airborne disease caused by *Mycobacterium tuberculosis*. New York City has an incidence of 6.8 per 100,000 population, with an increasing proportion of cases in foreign-born persons. The study was conducted at a large urban teaching hospital which serves a diverse immigrant population.

**Objective:** To provide a contemporary description of symptoms of TB patients, and information regarding subgroups with an atypical presentation.

**Methods:** We performed a retrospective chart review of patients admitted from January 1, 2016 through June 30, 2019; with a confirmed diagnosis of pulmonary or extrapulmonary TB. Patients younger than 18 years old, and those with non-TB infections were excluded. Patients' demographic, clinical, microbiologic and radiologic data were collected. Typical symptoms were defined as: cough for more than 2 weeks, fever, night sweats, hemoptysis, and weight loss.

**Results:** 69 patients had confirmed TB. They were predominantly male (72%), foreign born (85.5%), and Asian (71%). 77% of patients had Pulmonary TB, and 23% had extra-pulmonary TB. Overall, 65% of patients presented typical symptoms and 35% had atypical presentation; 14% having a normal chest x-ray. QuantiFERON (Qiagen, Germantown, MD) TB gold test was performed in 50% of patients; 37.1% had a negative result. Interestingly, 4% of typical patients (TP) and 42% of atypical patients (ATP) required more than one admission to arrive at a definitive diagnosis.

### Results:



ATP were less likely to have the following: a positive sputum AFB smear (48.1% vs. 80.0%;  $P < .01$ ), a positive AFB culture (81.5% vs. 97.5%;  $P < .01$ ), being placed on airborne isolation (81.5% vs. 100%;  $P < .01$ ), requiring a longer delay of isolation ( $3.35 \pm 3.8$  vs.  $1.05 \pm 0.23$ ;  $P < .0001$ ) and a longer delay obtaining ID consultation after admission ( $2.54 \pm 2.1$  vs.  $1.23 \pm 0.66$ ;  $P < .0001$ ), when compared to TP.

**Conclusions:** The absence of classical symptoms may lead to delay in diagnosis of TB. Awareness of atypical presentations, especially in immigrants from Asia, can result in earlier isolation and treatment, with improved clinical outcomes and decreased transmission.