Background

- 8.6 million new tuberculosis (TB) cases and 1.3 million deaths worldwide in 2012
- Reported TB cases and rates declined continuously in the United States since 1993
- Decline in reported extrapulmonary TB (EPTB) cases has been slower than in pulmonary TB (PTB) cases
- In the US, the annual proportion of EPTB cases among all reported cases increased from 15.7% in 1993 to 21.0% in 2006

Objectives

1. To describe the epidemiologic trends of different TB disease sites in Michigan
2. To determine demographic characteristics and risk factors of different TB disease sites
3. To examine the most common TB disease sites among EPTB cases

Methods

- Extracted data from Michigan Disease Surveillance System
- Study period: 01/01/1993 – 12/31/2013
- Case definitions (Figure 1):
  - PTB - TB disease involving the lung parenchyma
  - EPTB - TB disease of organs other than the lungs (e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, bones/joints, meninges)
- Concurrent – PTB & EPTB
- Descriptive analysis by chi-square test using SAS 9.3

Results

- The proportion of EPTB cases increased during the study period (Figure 2).
- We observed disparities among different socio-demographic (Figure 4) and racial (Figure 3) groups with respect to the site of TB disease.
- The proportion of concurrent TB cases was higher among HIV co-infected (Table 1) and foreign-born (Figure 4) TB cases.
- Among EPTB cases, the most common sites of disease were the pleura and cervical lymph nodes (Figure 5).

Discussion

- This study highlights the need to further characterize risk factors of EPTB to inform better diagnosis of EPTB
- Under-diagnosis of EPTB due to complicated clinical presentations
- Subpopulations at higher risk of developing EPTB (i.e. foreign-born, HIV)
- Infection control efforts for EPTB

Limitations:

- Dramatic drop in frequency in 1996 is due to missing surveillance data
- Inclusion of miliary TB as EPTB in chi-square analysis may represent misclassification of disease site

Future directions:

- Analysis of EPTB disease sites by country of birth using multivariate logistic regression

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