



# EPIDEMIOLOGICAL FEATURES OF EXTRAPULMONARY TUBERCULOSIS IN A LOW TB BURDEN AND HIGH IMMIGRANT RECEIVING CITY OF NORTHERN ITALY

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**Background:** Extrapulmonary tuberculosis (EPTB) contributes to the TB burden in Europe and its rate is not decreasing. Moreover, the reasons of reactivation of TB out of the lungs are not known. We conducted a study to describe the epidemiological features of EPTB in Ferrara, Italy.

**Methods:** We retrospectively identified all the adult TB cases admitted to the Hospital of Ferrara from January 1, 2009 through December 31, 2015. TB cases were included only once and were microbiologically, histologically or clinically diagnosed. We recorded age, gender, immigrant or native status, country of birth, site of disease, diabetes, HIV status, neoplasms, CVH (chronic viral hepatitis), CLD (chronic lung disease), and year of diagnosis. Cases with simultaneous pulmonary and extrapulmonary involvement were recorded as pulmonary TB (PTB) cases. Pearson's Chi Square Test and T-test were performed for statistical analysis.

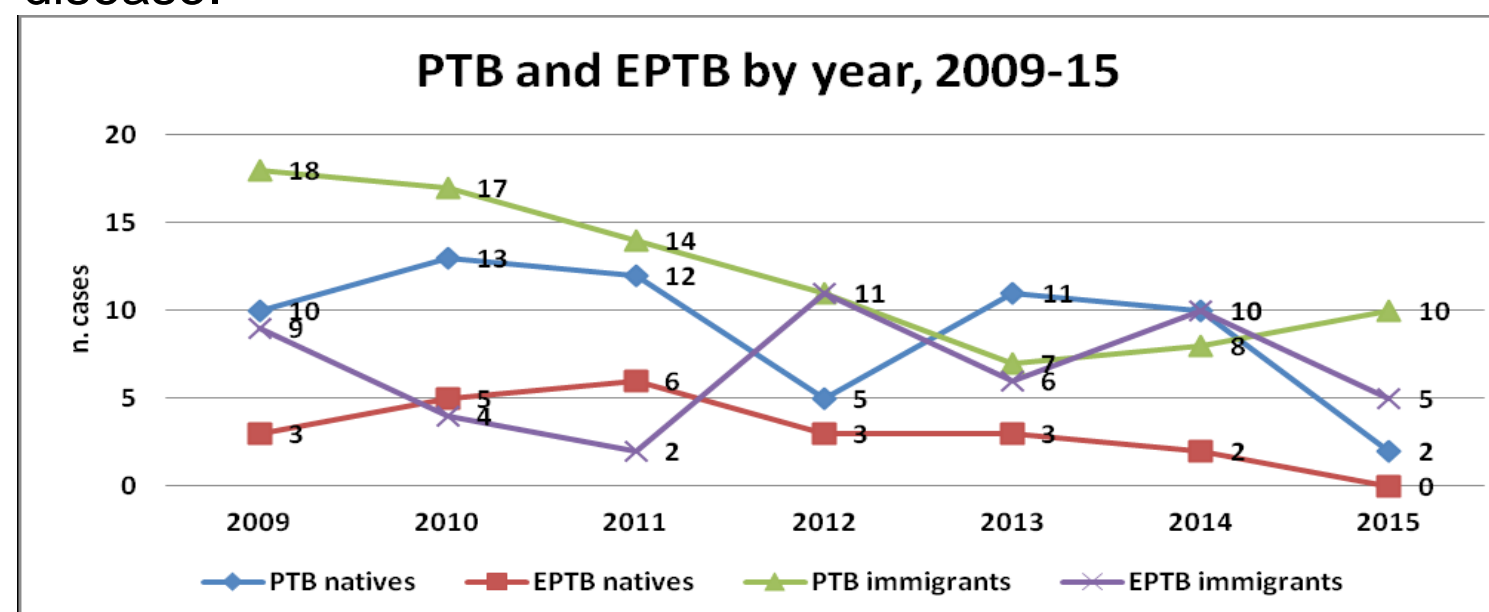
**Results:** We identified 217 (101 women and 116 men) adult TB patients, 132 immigrants and 85 natives, 147 PTB and 70 EPTB cases. The characteristics of the immigrant and native cases at baseline were similar for mean age (36.9 among immigrants vs 66.6 among natives) and the presence of neoplastic diseases and diabetes ( $p < 0.01$ ). Among immigrants, 24.2% (32/132) were from Pakistan, 23.4% (31/132) from Romania, 17.4% (23/132) from Morocco. Of all 217 cases, 10 cases, 5 natives (3 PTB, 2 EPTB) and 5 immigrants (2 PTB, 3 EPTB), were HIV positive. More than half of EPTB cases (68.6%) occurred among immigrants. Considering gender, EPTB was found mostly among women (41/70), especially immigrant women (27/70 EPTB cases) ( $p < 0.05$ ). Regarding country of origin, Romanians developed mostly PTB (27/84 immigrant PTB cases), Pakistani EPTB (19/48 EPTB cases) ( $p < 0.05$ ). EPTB involved nodes in 34 cases (48.6% of all EPTB), gastrointestinal and genitourinary tract in 10 and 3, bones in 9, pleura in 6, while meninges and other sites in 2 and 6, respectively. Compared to all TB cases, nodal TB occurred mostly among women (22/34 nodal TB cases), immigrants (28/34), and Pakistani subjects (15/34, of whom 12 women;  $p < 0.05$ ). Figure 1 illustrates PTB and EPTB cases by year, immigrant or native status and site of disease.

**Conclusions:** More than half of EPTB cases occurred among immigrants. Among those subjects, gender (women) and country of origin (Pakistan) associated with EPTB and nodal TB. Nodal TB has shown to be the most common site of EPTB, especially among immigrants. HIV status did not associated with EPTB. No decreasing trend in EPTB was found among immigrant or among native cases.

**Essential References**

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Site of disease	Natives	Immigrants	p-Value
<b>Nodes</b>	6	28	<b>p&lt;0.05</b>
<b>GI tract</b>	4	6	-
<b>GU tract</b>	1	2	-
<b>Bones</b>	5	4	-
<b>Pleura</b>	3	3	-
<b>Meninges</b>	0	2	-
<b>Other</b>	3	3	-
<b>PTB</b>	63	84	-



**Figure1.** Trend of PTB cases among natives (decreasing) and EPTB and PTB among immigrants (not decreasing), in the period 2009-15.

**Table1.** Site of disease among immigrants and natives, Ferrara, 2009-15.