Characteristics and clinical outcome of patients with HIV-associated tuberculosis (HIV/TB) in Europe and Argentina

BACKGROUND
Tuberculosis (TB) is globally the most common complication of HIV infection and poses many challenges to the clinical management of patients.

OBJECTIVES
- To establish a cohort of HIV/TB coinfected patients
- To compare regional differences in clinical characteristics and outcomes of patients with HIV/TB coinfection.

METHODS
895 consecutively enrolled HIV-patients diagnosed with TB between Jan. 2004 and Dec. 2006 in 47 clinics across Europe and Argentina were included in this analysis.

Patients were included in this study if they had either:
- A confirmed diagnosis of TB documented by either positive smear, culture, nucleic acid amplification test or histology
- A clinically-defined diagnosis of TB including clinical features of TB, anti-TB therapy, and TB diagnosis not subsequently ruled out.

Information collected included:
- Demographic data
- Previous TB diagnosis
- Clinical presentation of current TB disease
- Microbiological characterization of the TB infection, including resistance to anti-TB drugs and laboratory assessments
- Anti-TB treatment
- Clinical outcome of the TB disease
- Data on underlying HIV-infection

Demography, clinical characteristics and outcomes of HIV/TB patients were compared across regions of residence. The following countries participated in the study:
- Argentina/Southern Europe (A/S): Argentina, Italy, Spain (N=151, 14 clinics)
- Central/Northern Europe (C/N): France, Denmark, Switzerland, United Kingdom (N=150, 21 clinics)
- Eastern Europe (E): Belarus, Latvia, Romania, Russia, Ukraine (N=614, 12 clinics)

RESULTS

Patient Characteristics

- Large regional differences in patient characteristics were noted (Table 1).
- Patients in E were almost exclusively Caucasian and born locally, more often had injection drug use (IDU) as risk factor for HIV (62%) and TB (80%), and were younger. Prison and alcohol abuse were also common risk factors for TB acquisition in E whereas recent exposure to TB played an important role in TB acquisition in A/S. Patients in C/N more often were non-Caucasian and originated from countries where TB was endemic.
- The duration of TB-related symptoms was similar across the 3 regions.
- Conventional 1st-line TB treatment regimens (rifampin, isoniazid, pyrazinamide, ethambutol) were frequently used in C/N and A/S. Patients in E started anti-TB treatment with 1st line drugs more commonly and had a higher proportion of TB diagnosis was confirmed (i.e. by microscopy, PCR, culture or histology), and TB diagnosis less frequently relied on smear for acid-fast-bacilli.
- The proportion of patients with a successful outcome (cure or completion of TB treatment) was lower, and the proportion who died was substantially higher in E compared to the other regions (Table 3).

Follow-up and clinical outcome

- Median (IQR) follow-up time since the date of TB diagnosis was 13 (2-23), 18 (12-28) and 6 (2-12) months in A/S, C/N and E respectively.
- The proportion of patients with a successful outcome (cure or completion of TB treatment) was lower, and the proportion who died was substantially higher in E compared to the other regions (Table 3, Figure 1).

CONCLUSIONS

- HIV-infected patients who developed TB across regions of Europe and Argentina differed by their demographic and clinical characteristics.
- Marked differences in outcome of HIV/TB coinfected patients were noted across the regions. Mortality rate was significantly higher in Eastern Europe compared with Argentina/Southern Europe and Central/Northern Europe.
- Differences in patient demographics, access to combination antiretroviral therapy, TB drug-susceptibility and use of rifampicin-based TB therapy may have contributed to the observed differences in outcome.
- There is an urgent need to further understand why these differences exist and how outcome of HIV/TB in Eastern Europe can be improved.
- One of the study limitations was that there could be a potential differences in patients characteristics and outcomes across a region.