Abstract 1364962. Oral presentation November 13th 8:50

9th International Congress on Drug Therapy in HIV Infection Glasgow 2008

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Factors associated with poor clinical outcome among HIV-infected patients with tuberculosis (TB) in Eastern Europe. The HIV/TB collaborative study

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OBJECTIVES

- To assess possible regional diversity in the clinical characteristics, management and outcome of HIV/TB patients in Europe and Argentina
- Analyse risk factors associated with a fatal outcome after TB diagnosis in the cART era with special attention on Eastern Europe

METHODS

1075 consecutive HIV-patients starting TB treatment between 1/2004 and 12/2006 in 47 clinics across Europe and Argentina were included. Patients were stratified according to region of residence:

- **Argentina (AR), N=115**
- **Southern Europe (SE), N=210**
- **Central/Northern Europe (CNE), N=168**
- **Eastern Europe (EE), N=582**

Kaplan-Meier estimation and Cox proportional hazards regression models were used to estimate the probability of death

RESULTS

Pronounced regional differences were observed in patients characteristics

- Patients from EE:
  - younger, white, and from the same country as where treated for TB (95%). Up to 80% had a history of injection drug use (IDU) and 46% coinfected with HCV (vs. 9-25% in other regions, p<0.0001)
- Patients from CNE:
  - migrants from non-European countries (60%), female (53%) and with heterosexual HIV acquisition (65%)
- Patients from SE:
  - more often had TB diagnosis in the past: 18% vs. 7%, 9% and 6% in AR, CNE and EE resp., p<0.0001
- Patients from AR:
  - more pronounced immunodeficiency: median (IQR) CD4 cell count at Baseline: 92 (41-228), compared to 146 (55-291), 145 (54-284), 212 (89-463), in SE, CNE and EE resp., p<0.0001

Differences in diagnostic procedures, resistance patterns, TB treatment and cART Patients in EE:

- 69% had microbiologically or pathologically confirmed TB, vs. 72%, 79% and 86% in AR, SE and CNE respectively
- 50% with performed resistance test were infected with *M. tuberculosis* resistant to at least one TB drug, vs. 7%, 13% and 7% respectively (p<0.0001)
- 28% with resistance to at least Rifamycin, vs. 3%, 2% and 3% respectively (p<0.0001)
- Were less likely to:
  -initiate TB treatment with four standard first line TB drugs (Figure 1)
  -receive cART during first year after TB diagnosis (Figure 2)

Outcome of TB disease and factors associated with death:

- Outcome according to WHO classification reported for 965 patients
- Less patients from EE experienced Treatment success (cure/treatment completed): 48% vs. 64%, 66%, and 85%respectively
- Death rates and factors associated with higher mortality rates are presented on Figures 3 and 4

CONCLUSIONS

- Pronounced differences observed clinical characteristics, management and survival prognosis after TB diagnosis in HIV/TB patients across Europe and Argentina
- Higher mortality rate in EE compared with other regions can partially be explained by differences in:
  -patterns of anti-TB treatment
  -presence of TB drug-resistance
  -access to cART and baseline CD4 cell count
- There is an urgent need to further understand why these differences exist and how outcome of HIV/TB in Eastern Europe can be improved

Figure 1

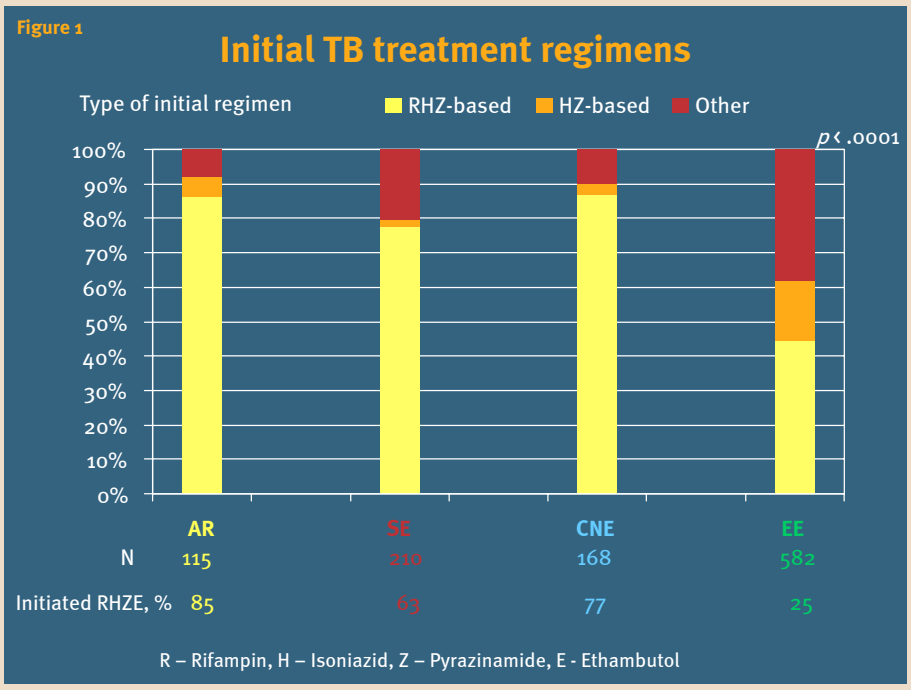


Figure 2

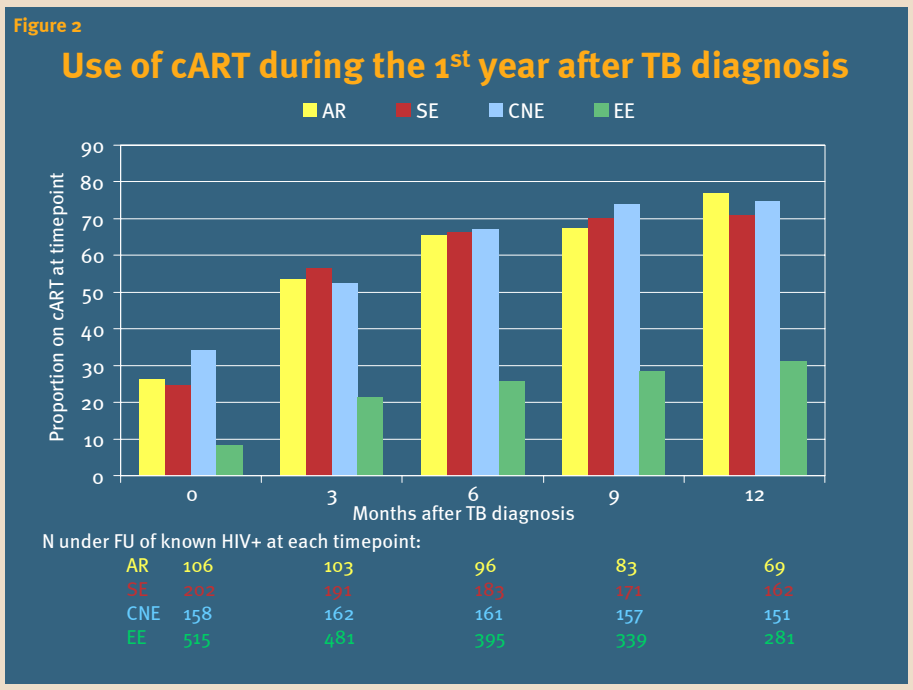


Figure 3

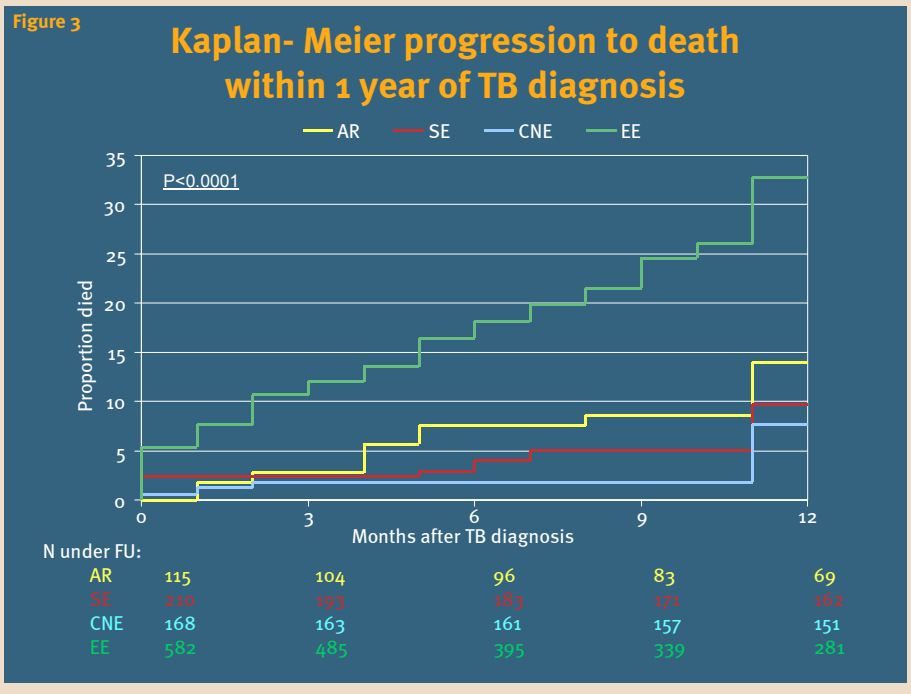
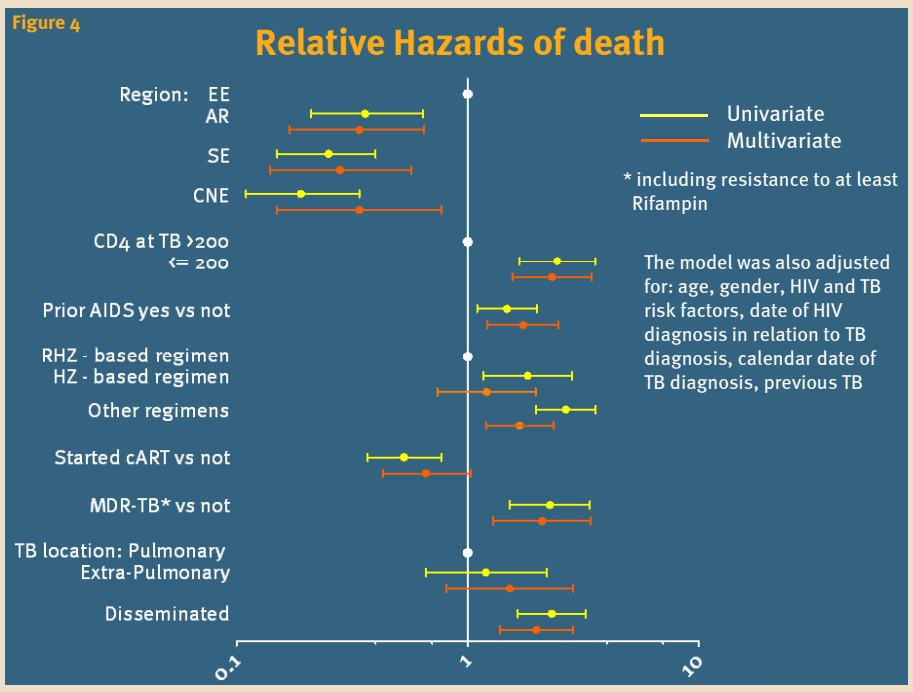


Figure 4



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