

## **Tuberculosis among immigrants: risk factors associated with a delayed diagnosis in Portugal**

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### **Background:**

A timely diagnosis is a key factor to TB control, since delayed diagnosis increases transmission, severity and mortality rates. However, immigrants have a higher risk of delay due to difficulties in the access to the healthcare services. Hence, the aim of this study is to identify risk factors associated with delays in immigrants and compare the results with the national population.

### **Methods:**

We carried out a retrospective study to analyse all pulmonary TB cases notified in Portugal having a passive case finding, between 2008 and 2017. Global delay was defined as the number of days between symptoms onset and diagnosis date and divided into patient delay (time between symptoms onset and first appointment date) and healthcare services delay (time between first appointment date and diagnosis date). A descriptive analysis was performed, and factors associated with each delay were identified using a Cox regression. Analyses were stratified by country of origin: immigrants (born outside of Portugal) and nationals (Portuguese population).

### **Results:**

Our results were consistent with previous studies and showed that the immigrant population was younger, had a higher proportion of HIV infection and had a smaller proportion of alcoholics, drug addicts, inmates, homeless and individuals living in community residencies compared to nationals. Immigrants had higher patient delay (44 vs. 36 days) compared to nationals. Different risk factors were associated with the delay in immigrants and nationals. Alcohol addiction was the only significant variable in both populations and was associated with lower delay in health services.

**Conclusions:**

Immigrants have higher global delay, attributable to a higher patient delay. The risk factors related to TB diagnosis delay have an heterogeneous association in immigrant and nationals. Hence, tailored interventions should be implemented to decrease the delay among immigrants.

**Key messages:**

- Different risk factors were identified for the patient and healthcare services delay among immigrants and nationals, which highlight the importance to analyse each component of TB diagnosis delay.
- Immigrants have higher patient delay compared to nationals, hence tailored interventions should be implemented to facilitate access to healthcare services in this population.