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An emerging threat: tuberculosis in HIV-infected intravenous drug users

Merisor Simona¹, Eliza Daniela Manea^{*1}, Raluca Jipa², Roxana Cernat³, Erzsebet Iringo Zaharia Kezdi², Manuela Arbune⁴, Andrei Vata⁵, Teodora Moisil⁶, Adriana Hristea²

¹*National Institute of Infectious Diseases*

²*University of Medicine and Pharmacy*

³*Infectious Diseases Clinical Hospital*

⁴*University Danubius*

⁵*Infectious Diseases Hospital*

⁶*Clinical Hospital for Infectious Diseases and Pulmonology*

Background: Intravenous drug users (IDUs) are at an increased risk of tuberculosis (TB), which is an important cause of mortality. In Romania 149 (21,3%) of 698 newly diagnosed HIV patients in 2015 were IDUs. We are aiming to assess characteristics of HIV-TB co-infected patients, according to their status of IDU.

Material/methods: We performed a retrospective study, analyzing the records of patients diagnosed with HIV and TB in six infectious diseases university hospitals across the country, in 2015.

Results: We identified 150 patients HIV-TB co-infected, of which 30 (20%) were IDUs. There was an overall male predominance, especially in IDUs group: 25 (83%) versus 71 (59%) in non-IDUs group ($p=0.01$, $OR=0.3$, $95\%CI=0.1-0.8$). The median age was 30 (IQR: 26-34) in IDUs versus 27 (IQR: 26-39) in non-IDUs ($p=0.577$). The HIV diagnosis was established before TB diagnosis in 16 (53%) cases

in IDUs group and in 95 (79%) cases in non-IDUs group ($p=0.009$, $OR=0.3$, $95\%CI=0.1-0.7$). Most of the patients were in stage C of HIV infection at the moment of TB diagnosis: 22 (73%) IDUs versus 110 (92%) non-IDUs ($p=0.01$, $OR=0.25$, $95\%CI=0.08-0.7$). In IDUs versus non-IDUs, the median CD4 at the moment of HIV diagnosis was 100 (IQR=24-424) versus 192 (IQR=81-384) ($p=0.3$) and the median CD4 at the moment of TB diagnosis was 23 (IQR=10-83) versus 83 (23-206) ($p=0.01$), respectively. Nine (30%) patients from the IDUs group were on antiretroviral therapy (ART) versus 75 (63%) from the non-IDUs group ($p=0.002$, $OR=0.2$, $95\%CI=0.1-0.6$). Five (17%) IDUs received prophylactic cotrimoxazole versus 57 (48%) non-IDUs ($p=0.002$, $OR=0.2$, $95\%CI=0.08-0.6$). In IDUs versus non-IDUs, pulmonary TB was noted in 16 (53%) versus 77 (64%). Both pulmonary and extrapulmonary TB was seen in 8 (27%) versus 24 (20%), and extrapulmonary in 6 (20%) versus 19 (16%) ($p=0.5$) in IDUs versus non-IDUs respectively. Commercial nucleic acid amplification test was positive in 19 (63%) versus 22 (18%) cases ($p<0.001$, $OR=7.7$, $95\%CI=3.2-18.4$) and *M.tuberculosis* culture was positive in 13 (43%) versus 42 (35%) cases ($p=0.4$, $OR=1.4$, $95\%CI=0.6-3.2$) in IDUs versus non-IDUs. Both groups had 10% drug resistance. The in-hospital mortality was 27% in IDUs versus 17 (14%) in non-IDUs patients ($p=0.09$, $OR=2.3$, $95\%CI=0.8-6.0$).

Conclusions: The majority of HIV-TB co-infected patients were late presenters. Co-infected IDUs patients were more immunosuppressed at the moment of HIV diagnosis, as well as at the TB diagnosis. Although most of the patients already had AIDS defining illness, only half of the IDUs and two thirds of the non-IDUs were on ART before TB diagnosis. Drug-resistance was similar in both groups, while the mortality was significantly higher in IDUs.