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Abstract (poster session)

The IFN-gamma release assay ELISpot does not discriminate latent from active tuberculosis

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Objectives: The use of IFN-gamma Release Assays to detect *Mycobacterium tuberculosis* infection has been essentially approved for the diagnosis of primary infection (e.g., after exposure to contagion) or latent tuberculosis (e.g., before an immunosuppressive therapy). French regulation authorities recommended in 2011 not to use such IFN-based tests to diagnose active tuberculosis; however, the performances of the tests to discriminate latent from active tuberculosis have been poorly assessed. We aimed to determine if the intensity of cellular immune response, reflected by the quantitative ELISpot assay, was different in patients with active or latent infection. **Methods:** We retrospectively studied patients with a positive ELISpot tuberculosis assay (T-SPOT.TB®, Oxford Immunotec, England) in our institution (Grenoble University Hospital, France) from 2006 to 2009. ELISpot assays performed to eliminate latent tuberculosis before biologics (e.g., TNF- α antagonists) were not considered. Patients have been diagnosed with either active or latent tuberculosis by various means (bacterial culture, pathology, or therapeutic test). Receiver-operator characteristics (ROC) curves for peptide panels ESAT-6 and CFP-10 were elaborated for the diagnosis of active vs latent tuberculosis. **Results:** 133 patients had a positive ELISpot assay (mean age 62 years); the test was performed to investigate a suspected active tuberculosis in 111 patients (83.4%). 31 (23.3%) patients were diagnosed with active tuberculosis, among whom 13 had a positive bacterial culture; the other patients were diagnosed with latent tuberculosis. There was no statistical difference between latent and active tuberculosis for peptide panel ESAT-6 (67.5 vs 93.1 spots, $p=0.19$) nor peptide panel CFP-10 (87.5 vs 111, $p=0.19$). The difference was still not significant when considering only the culture-positive cases. Area under curve of ROC curve was low (0.58) for both panels. **Conclusion:** When an ELISpot assay is positive, the number of spots cannot be used to discriminate latent from active tuberculosis. Consistently with previous works establishing that sensibility and specificity of IFN-g release assays are not high enough to recommend their use to diagnose active tuberculosis, our study confirms that they must not be used, even as a quantitative test, in this indication.