Abstract Group: 10.2. Tuberculosis

Keyword 1: Transplantation  Keyword 2: Tuberculosis - diagnosis  Keyword 3: Infections

Title: Evaluation of IFNγ release assays for detection of cellular immunity towards M. tuberculosis and CMV in samples from deceased donors

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Body: IGRAs may be valuable for risk assessment of organ donors, but no data exist on their feasibility in deceased donors. Therefore, we evaluated the performance of an ELISA, an ELISPOT and a flow-cytometric assay (FACS) to determine T-cell immunity towards M. tuberculosis and CMV in deceased donors. 100 donors (52±17 yrs) were screened at the time of organ procurement. A CMV-IgG ELISA was used as a gold standard for CMV infection. Specific stimulation was performed using PPD, ESAT-6/CFP-10, and a CMV lysate in combination with commercial assay formats (QFT-TB/CMV as ELISA, T-SPOT.TB as ELISPOT). Indeterminate results were observed in 49.0% of ELISA, 13.3% of FACS and 0% of ELISPOT assays. CMV-specific immunity was detected in 26.0%, 46.9%, and 54.1% of QFT-CMV, FACS, and ELISPOT-samples, respectively. Agreement with serology was highest for FACS (93%, K=0.85), followed by ELISPOT (81%, K=0.61), and ELISA (81%, K=0.62). The percentage of PPD-positive results differed between assays (27.3% for ELISA, 27.6% for FACS, and 48.9% for ELISPOT). Among PPD-positive samples, 8.3% were QFT-TB positive, 16.7% were positive in an ESAT-6/CFP-10-specific FACS-assay, and 25.6% were positive in the T-SPOT.TB test. In the setting of this study, 85.4% of donors had received steroids and 56.3% of ELISAs, 92.9% of ELISPOTs, and 97.0% of FACS samples could be processed within the respective recommended time frame. Nevertheless, neither delayed processing nor steroids had a significant effect on indeterminate results. In conclusion, cellular immunity may be analysed from samples of deceased donors, although indeterminate results are more frequent than in healthy individuals.