O211
Oral Session
Advances in CMV infection in transplant recipients

CYTOMEGALOVIRUS SPECIFIC T-CELL IMMUNE RESPONSE AS A RISK FACTOR OF INFECTION IN SOLID ORGAN TRANSPLANT RECIPIENTS AT LOW RISK FOR CMV INFECTION

D. Mena Romo[1], P. PÈrez-Romero[1], C. MartÌn-Gandul[1], P. Blanco-Lobo[1], M. S·nchez[1], M. Gentil[1], M. GÛmez[1], E. Lage[1], E. Cordero[1]

[1]Clinic Unit of Infectious Diseases University Hospital Virgen del Rocío, Instituto de Biomedicina of Seville, Seville, Spain

Objectives: Cytomegalovirus (CMV) infection is the main cause of morbidity and mortality after solid organ transplantation (SOT). In patients at low risk for CMV infection with pretransplant positive serology, the incidence of CMV infection and disease after the transplant is 10% and 5%, respectively. Several studies have associated the low rates of CMV disease with high production of IFN-g. The objectives of this study were to determine if the CMV-specific T-cell response can be used as predictor for developing infection and disease, to describe the chronology and relationship with viral replication in this population.

Methods: A prospective cohort study of consecutive low risk SOT patients followed one year after transplant. For determinations, samples were collected weekly during the first 6 months after transplant and every other week from month 3 to 6. Viral replication was determined using real-time PCR (Cobas Ampliprep/Cobas Taqman, Roche Applied Science), while CMV-specific immune response was determined by stimulating peripheral blood mononuclear cells with a pepmix of CMV IE-1 and pp65 proteins and by staining intracellular cytokines (IFN-g, IL-2) and extracellular markers (CD4, CD8, CD3, CD69), results were quantified using flow cytometry. A value of CD69+CD8+IFN-g+>0.25%, normalized to the negative control, was established as positive immunity.

Results: One hundred and thirteen patients were included in the study, 93 of which completed 6 months of follow up and were used for the analysis. Patient median age was 58 years old (range: 50-65); 78.5% male; 46.2% kidney transplants, 47.3% liver, 4.3% heart and 2,2% liver-kidney. Only 38 patients (40.9%) had immunity at baseline (14 days post-transplantation). Patients with and without baseline immunity did not show differences in the total number of replication episodes (21 vs 28, p= 0.586). Forty-nine patients had 1 or more replication episodes, in the 21 patients with baseline immunity the median viral load peak was 1114.5 IU/ml (range: 247-41140) while it was 2612 IU/ml (range: 199-133770) in the 28 patients without baseline immunity (p=0.702). Nineteen patients who presented baseline immunity and 10 patients without immunity received treatment for CMV infection (p= 0.496), with a median duration of 34 days (range: 22-58) and 29 (range: 10-133; p= 0.683), respectively.

Twenty-three of the patients with no baseline immunity (41.8%) acquired a CMV-specific immune response within a median of 15 weeks (range: 7-50). The total number of replication episodes, peak viral loads and the number of days with CMV-treatment were significantly lower after acquisition of immunity (p<0.001).

Conclusions: Using the established cut-off, no significant statistical differences in clinical outcomes were found between patients at low risk for CMV infection with or without baseline immunity. However, the immunity acquired after transplantation may have a therapeutic effect on the control of the replication.