

Abstract No. : A581

Theme : Peritoneal Anatomy and Histopathology

## **Correlation Between Morpho-functional Features and Mesothelial-to-mesenchymal Transition in a Series of Peritoneal Biopsies From Short-term Peritoneal Dialysis Patients**

*Jimenez, J.A.<sup>1</sup>, del Peso, G.<sup>2</sup>, Bajo, M.A.<sup>2</sup>, Aguilera, A.<sup>3</sup>, Aroeira, L.Z.<sup>3</sup>, Ramirez-Huesca, M.<sup>3</sup>, Perez-Lozano, M.L.<sup>3</sup>, Tabernero, A.<sup>2</sup>, Fernandez, E.<sup>2</sup>, Sanchez-Tomero, J.A.<sup>3</sup>, Lopez-Cabrera, M.<sup>3</sup>, Selgas, R.<sup>2</sup>; University Hospital, Guadalajara<sup>1</sup>, University Hospital La Paz<sup>2</sup>, University Hospital La Princesa<sup>3</sup>, Madrid, Spain*

Objectives: Epithelial-to-mesenchymal transition of mesothelial cells, that is, mesothelial-to-mesenchymal transition (MMT), seems implicated in peritoneal pathogenesis but its precise correlation with structural and functional peritoneal changes remains to be defined. In order to clarify the pathogenic role of MMT we performed a correlation study in a biopsy series of PD patients, most of which were at an initial phase of treatment. Methods: A total of 44 parietal peritoneal biopsies were selected. Patients had a mean time on PD of 19±16 months (range 1.9-79). 95% and 77% of them had been less than 3 and 2 years on PD respectively. Biopsies were obtained during renal transplantation in 73% of cases. Histopathological analysis included morphological (mesothelial integrity, submesothelial thicknesses and vasculopathy) and immunohistological variables (citokeratin and alpha-smooth muscle actin expression). MMT was defined by the presence of citokeratin + submesothelial fibroblasts. A peritoneal transport kinetic study was performed to calculate the peritoneal mass transfer area coefficient of urea (U-MTAC) and creatinine (Cr-MTAC), net ultrafiltration and Cr D/P ratio. Results: 55% of the samples had relevant fibrosis and 32% vasculopathy, and both lesions correlated with time on PD (p=0.01 and p=0.03, respectively). Evidence of MMT was present in 25% of the biopsies and myofibroblasts in 51%. MMT correlated with peritoneal fibrosis. 91 % of MMT biopsies, but only 42% of non-MMT biopsies showed submesothelial thickness greater than 150 µm (p=0.006). Patients with MMT had significantly higher Cr-MTAC values (10.7±4 vs. 8±4 ml/min, p=0.04) and a longer time on PD (27.5±19 vs. 16±13 months, p=0.04). Patients with MMT showed a greater tendency to have a high transport status and lesions of vasculopathy, but it did not reach statistical significance. Conclusions: In this series of short-term PD patients MMT correlated with time on dialysis, peritoneal fibrosis and Cr-MTAC values. These data suggest a relevant role of MMT in the pathogenesis of peritoneal structural and functional changes.