

## Circulating Tumour Cells And Their Impact On The Management Of The Liver Transplant Patient With Hepatocellular Carcinoma

Felipe ALCONCHEL\*<sup>1</sup>, Francisco VILLALBA<sup>1</sup>, Luis SAENZ<sup>1</sup>, María Isabel SÁNCHEZ<sup>1</sup>, David FERRERAS<sup>1</sup>, Pedro CASCALES<sup>1</sup>, Francisco SÁNCHEZ-BUENO<sup>1</sup>, Ricardo ROBLES<sup>1</sup>, Pablo RAMÍREZ<sup>1</sup>

<sup>1</sup>*Surgery And Organ Transplantation, Virgen De La Arrixaca University Hospital (IMIB), SPAIN*

**Background :** For hepatocellular carcinoma (HCC), liver transplantation (LT) is considered a curative treatment, however, more than 10% of transplant recipients have recurrences within the first year. This suggests the existence of circulating- tumor-cells (CTC) that spread from a primary tumor and travel to peripheral blood and distant organs. Their detection and monitoring could be of great clinical value to an early prediction of recurrence as a real-time liquid biopsy. The aim of this study is to determine the relationship between CTC and clinicopathological variables and to compare the CTC-levels in patients with HCC before transplantation and at one and two years after surgery.

**Methods :** Peripheral blood was obtained from 34 patients with HCC included in the LT list. Immunomagnetic isolation of CTC was performed by the IsoFlux® System. Cell enrichment was stained with anti-CK, Hoechst-33342 and antiCD45, performing cell counting under a fluorescence microscope. The clinicopathological variables (number of tumors, vascular invasion, tumor necrosis and recurrence) were collected. Spearman's rho, Mann-Whitney and Wilcoxon test were used.

**Results :** We found statistically significant differences in the CTC-levels between patients with vascular invasion and those without ( $U=0$ ;  $p=0.005$ ) such that patients with vascular invasion had median levels of 539 CTC/10 mL (IR: 448- 1768) and those without vascular invasion had median levels of 3 CTC/10 mL (IR:0-31.25). Also we found a statistically significant decrease in post-transplant CTC-values at one year ( $Z= -2.672/ p=0.008$ ) and two years ( $Z= -2.218/ p=0.027$ ).

**Conclusions :** The median CTC-levels of the patients included in the study showed a downward trend after liver transplantation. Also, a significant difference was found in the levels of pre-transplant-CTC between patients with and without vascular invasion, these levels being significantly higher in patients with vascular invasion compared to those without vascular invasion. Detection of CTC may have a useful clinical implication in predicting the evolution of HCC after LT.

Corresponding Author : Felipe ALCONCHEL (alconchelgago@gmail.com)