Background: CD163 is a marker of monocyte and macrophage activation. Its soluble form, sCD163 has been shown to correlate with liver fibrosis and clinical outcomes in chronic liver diseases (CLD). The association of sCD163 with direct portal hemodynamics and liver functionality has not been investigated.

Objectives: To explore the association of sCD163 with direct portal hemodynamics and quantifiable markers of liver function across the spectrum of CLD.

Methods: We prospectively studied a cohort of compensated cHCV patients with liver biopsy and direct pressure (dPP) measurement. Portal and peripheral blood samples were obtained. Histology activity index (HAI) and Ishak fibrosis score (IF) were used for assessment of inflammation and fibrosis, respectively. Portal hepatic filtration rates (pHFR), and porto-systemic shunt fraction (Shunt%) were determined by dual cholate test (HepQuant LLC). Mann-Whitney and Spearman’s rho were used for group comparison and correlation analysis, respectively.

Results: Of 30 patients enrolled, 29 completed the study. sCD163 positively correlated with IF (portal sCD163 vs. IF r=0.57, p=0.001) and dPP (portal sCD163 vs. dPP r=0.41, p=0.03), but showed no correlation with HAI. Additionally, pHFR negatively correlated with portal sCD163 (r= -0.49, p=0.01). Patients with abnormal Shunt% (30%) had higher levels of sCD163. This was found in both portal and systemic blood, but significance was greater in portal circulation (Portal sCD163 p=0.0005, peripheral sCD163 p=0.001).

Conclusions: Findings suggest that in addition to being a marker of morphological changes in CLD, sCD163 may also be associated with functional and hemodynamic alterations across the spectrum of compensated liver disease.