

O209

2-hour Oral Session

New insights in viral hepatitis

Glomerular and tubular kidney involvement in HCV cirrhosis

Donatella Palazzo^{*1}, Elisa Biliotti², Francesca Tinti³, Alessandra Bachetoni⁴, Paola Perinelli⁵, Andrea Cappoli³, Maria Domenica D'alessandro⁴, Stefania Grieco³, Raffaella Labriola⁴, Mirosława Subic⁶, Ilaria Umbro³, Paola Rucci⁷, Anna Paola Mitterhofer³, Gloria Taliani⁸

¹Sapienza University of Rome, Clinical Medicine, Rome, Argentina

²Sapienza University of Rome, Tropical Medicine , Clinical Medicine, Rome, Italy

³Sapienza University of Rome, Clinical Medicine, Rome, Italy

⁴Sapienza University of Rome, Clinical Pathology, Rome, Italy

⁵Sapienza University of Rome, Rome, Italy

⁶Sapienza University of Rome, Internal Medicine, Roma, Italy

⁷Department of Medicine and Public Health, University of Bologna, Bologna, Italy

⁸Sapienza University of Rome, Clinical Medicine, Roma, Italy

Background: Several evidences suggest that HCV has a negative impact on renal function. In addition renal dysfunction is a complication of liver cirrhosis. The relation between HCV infection and glomerular damage is well recognized, but very limited data are available on HCV-mediated tubular damage. The aim of the study was to assess the presence of renal involvement (RI), glomerular or tubular, in patients with HCV cirrhosis.

Material/methods: 98 patients with HCV cirrhosis CPT-A were consecutively enrolled. Urinary albumin/creatinine (ACR) and α 1microglobulin/creatinine (α 1MCR) were calculated. Estimated glomerular filtration rate (eGFR) was calculated with CKD-EPI 2009 equation. Glomerular involvement was defined based on ACR>20 μ g/mg, tubular involvement based on α 1MCR>14 μ g/mg plus fractional sodium excretion (FeNa)>1. Urine concentration of Liver-type Fatty Acid-Binding Protein (L-FABP) and Kidney injury molecule-1 (KIM-1) were examined in morning midstream urine samples. Urine concentrations of KIM-1 and L-FABP were normalized to urine creatinine concentration

Results: eGFR was \geq 60 mL/min/1.73m² in 92 patients (93.8%) and between 45-59 mL/min/1.73m² in 6 patients (6.1%). Glomerular involvement was found in 19 patients (19.4%), tubular involvement in 31 patients (31.6%) and they co-occurred in 10 patients (p=0.034). Patients with glomerular or tubular involvement, or both, showed significantly lower eGFR values (p=0.005) (Tab 1). A ROC curve was drafted and a cut point of 90 ml/min predicted renal involvement (RI) (sensitivity 63%, specificity 75%), although it was unable to distinguish tubular versus glomerular involvement (p=0.914). Patients with RI were older, had higher ACR and α 1MCR levels and exhibited a more severe KDIGO stage (Tab 1). No association was found between RI and: HCV-RNA levels, liver stiffness and liver function tests. L-FABP and KIM-1 levels were significantly higher in patients with RI. Tubular involvement was significantly associated with increased levels of LFABP and KIM-1, while glomerular involvement was associated only with high L-FABP level (Tab1)

Conclusions: Tubular and/or glomerular involvement are quite frequent in HCV cirrhotic patients. The occurrence of eGFR < 90 ml/min/1.73m² allows to suspect renal involvement and should prompt to monitor renal function more closely.

Table 1	Tubular Involvement - N 31	No Renal Involvement - N 58	p
Age - years	67.0 (56.0-75.0)	58.0 (52.0-66.0)	0.015
eGFR - mL/min/1.73m ²	89.8 (73.1-95.7)	99.0 (90.5-104.0)	0.019
KDIGO			
Stage 3 (45-59mL/min/1.73m ²)	3 (60.0%)	2 (40.0%)	0.017
ACR - mg/g	9.5 (3.9-25.9)	3.3 (1.9-6.4)	<0.0001
Alfa1micro/creatininuria - ng/mg	18.4 (8.8-24.0)	4.3 (3.5-7.9)	<0.0001
L-FABP/creatininuria - ng/mg	[17 patients] 3.61 (1.92-6.18)	[33 patients] 1.20 (0.64-1.19)	0.002
KIM-1/creatininuria - ng/mg	[17 patients] 4.24 (1.57-6.17)	[33 patients] 1.61 (0.88-2.47)	<0.0001
Glomerular Involvement - N 19			
eGFR - mL/min/1.73m ²	87.4 (73.1-94.6)	99.0 (90.5-104.0)	0.002
ACR mg/g	38.3 (25.9-97.2)	3.3 (1.9-6.4)	<0.0001
Alfa1micro/creatininuria - ng/mg	12.1 (5.9-21.2)	4.3 (3.5-7.9)	0.002
L-FABP ng/mg	[10 patients] 3.40 (2.79-4.85)	[33 patients] 1.20 (0.64-1.19)	<0.0001
Renal Involvement - N 40			
Age - years	66.5 (55.3-74.8)	58.0 (52.0-66.0)	0.012
eGFR mL/min/1.73m ²	89.3 (73.9-95.5)	99.0 (90.5-104.0)	0.001
KDIGO Stages			
			0.009
1 (mL/min/1.73m ²)	18 (29.5)	43 (70.5)	
2 (mL/min/1.73m ²)	18 (60.0%)	12 (40.0)	
3 (45-59 mL/min/1.73m ²)	4 (66.7%)	2 (33.3)	
ACR mg/g	16.1 (4.4-38.3)	3.3 (1.9-6.4)	<0.0001
Alfa1micro/creatininuria - ng/mg	15.3 (6.7-21.8)	4.3 (3.5-7.9)	<0.0001
L-FABP/creatininuria - ng/mg	[22 patients] 3.5 (2.3-4.5)	[33 patients] 1.20 (0.64-1.19)	<0.0001
Kim-1/creatininuria - ng/mg	[22 patients] 2.7 (1.5-4.6)	[33 patients] 1.61 (0.88-2.47)	0.016
Values are expressed as number (%) or median (interquartile range) as appropriate.			