

**P2076****Clinical determinants of Doppler derived intrarenal hemodynamics in patients with HFpEF**I Irina Cabac-Pogorevici<sup>1</sup>; V Revenco<sup>1</sup><sup>1</sup>State University of Medicine and Pharmacy, Cardiology, Chisinau, Moldova (Republic of)

**Purpose:** The interaction between the systemic and intrarenal hemodynamics (IRH) in hypertensive patients is a complex physiological phenomenon which has been largely discussed and widely analysed, meanwhile there is a lack of consistent data about the clinical determinants of the IRH in patients with heart failure (HF). Thus, the aim of our study is to appraise the clinical and hemodynamic determinants of the IRH in a group of patients with HFpEF.

**Methods:** The population of our study were 62 patients (34 females and 28 males, mean age  $50,15 \pm 14,50$  years) with HFpEF. All subjects underwent careful clinical history and physical examination. A complete echocardiographic study, ambulatory blood pressure monitoring and color Doppler ultrasound of renal and intrarenal arteries were performed to all the subjects. Intrarenal Doppler measurements were repeated in three parts of both kidneys (superior, median, and lower) until three reproducible waveforms were obtained. The following IRH parameters were obtained: renal resistive index (RRI), renal pulsatile index (RPI), acceleration time (AT).

**Results:** The mean RRI was  $0,6672 \pm 0,0452$ , mean RPI  $1,2533 \pm 0,178$ , mean AT  $66,68 \pm 2,324$  ms, mean daytime ambulatory systolic blood pressure (SBP) was  $153,73 \pm 12,82$  mmHg, mean nighttime SBP was  $138,32 \pm 16,35$  mmHg, mean 24 hours SBP was  $146,12 \pm 13,96$  mmHg, mean daytime ambulatory diastolic blood pressure (DBP) was  $92,07 \pm 18,93$  mmHg, mean nighttime DBP  $81,79 \pm 8,34$  mmHg, mean 24 hours DBP  $86,59 \pm 6,78$  mmHg. The mean pulse pressure (PP) was  $59,10 \pm 22,90$  mmHg. The mean 24 hours heart rate (HR) was  $75,14 \pm 26,86$  beats/minute. RRI as well as the RPI were negatively related to ambulatory 24 hours DBP ( $r = -0,239$ ,  $p < 0,01$ ), ( $r = -0,139$ ,  $p < 0,01$ ), mean nighttime DBP ( $r = -0,299$ ,  $p < 0,01$ ), ( $r = -0,129$ ,  $p < 0,01$ ), HR ( $r = -0,326$ ,  $p < 0,01$ ), ( $-0,123$ ,  $P < 0,01$ ). There was a positive association of only IRR with ambulatory 24 hours SBP ( $r = 0,359$ ,  $p < 0,01$ ), mean daytime SBP ( $r = 0,260$ ,  $p < 0,05$ ) ambulatory PP ( $r = 0,266$ ,  $p < 0,01$ ), age ( $r = 0,253$ ,  $p < 0,01$ ), left ventricular mass (LVM) ( $r = 0,459$ ,  $p < 0,001$ ) and relative wall thickness (RWT) ( $r = 0,293$ ,  $p < 0,01$ ), statistically significant even after adjustment for various confounding factors. In multiple regression analysis, mean 24 hours SBP, daytime SBP, PP ( $p < 0,01$ ) and LVM ( $p < 0,05$ ) were revealed as main determinants of RRI and IPR in patients with HFpEF, meanwhile we didn't find an important correlation of AT and any clinical or hemodynamic parameter in this particular group of patients.

**Conclusions:** In addition to local renal vascular properties, the central hemodynamic factors significantly influence the intrarenal arterial patterns in patients with HFpEF. Though IRH was initially considered as a reflection of the intrarenal vascular changes, it is actually the result of a complex interaction between renal and systemic vascular factors useful in assessment of a large spectrum of cardiovascular conditions.