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Title: Cystatin C as a marker of cardiovascular diseases in patients with obstructive sleep apnea (OSA) with concomitant diabetes mellitus type 2 (DM2)

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Body: OSA is known to increase the risk of cardiovascular diseases (CVD) and may contribute to the development of insulin resistance and DM2. In the course of DM2 renal function may become impaired that itself is another factor of increased risk of CVD. An important indicator of renal dysfunction is cystatin C (CysC). We aimed to evaluate the importance of CysC as a marker of CVD in OSA pts with concomitant DM2. 238 OSA pts were examined. Elevated level of CysC was found in 97(40.3%). 64 OSA pts suffered from DM2 (27%) of whom 29(45%) pts presented with elevated level of CysC. Prevalence of selected CVD and studied parameters in OSA pts with coexisting DM2 are compared to other pts in the table below.

variable	DM2 elevated CysC n=29	DM2 normal CysC n=35	no DM2 elevated CysC n=68	no DM2 normal CysC n=106
Arterial hypertension (AH)	93%	94%	74%	67%
Coronary artery disease (CAD)	51%	20%	28%	14%
Heart failure (HF)	28%	6%	13%	2%
AHI	39±22	41 ±22	39±21	38±21
ODI	53±31	49±25	43±28	42±27
Hba1c>6.5%	59%	57%	11%	12%

Logistic regression analysis revealed that elevated level of CysC in OSA pts with coexisting DM2 was

associated with higher incidence of CAD (OR=5.7; 95%CI=1.7-19.4; p=0.004) and HF (OR=8.4; 95%CI=1.4-49.2; p=0.016) compared to OSA pts with DM2 and normal CysC. Among non-diabetic OSA pts elevated CysC indicated higher incidence of HF (OR=6.1; 95%CI=1.2-30.7; p=0.026). Presence of DM2 and elevated CysC was not associated with significantly different prevalence of AH in the studied pts. Conclusion: CysC concentration is strongly associated with CAD and HF but not AH in OSA pts with concomitant DM2.