

## Cardiovascular Disease

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### RELATIONSHIP BETWEEN SMOKING, NUTRITIONAL STATUS, AND RENAL FUNCTION IN PATIENTS WITH ARTERIAL HYPERTENSION

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**PURPOSE:** To determine the relationship between smoking, nutritional status and renal function in patients with arterial hypertension.

**METHODS:** We examined 53 (17 women and 36 men) patients with stage II arterial hypertension (mean age 55 (7.3) years). All patients were divided into two groups depending on smoking status. 19 smokers (18 men and 1 woman) made up group I (average age - 54.2 (8.8) years), the “pack / year” index - 30 (20; 37), the degree of nicotine addiction according to the Fagerstrom test - 6 ( 5; 7). Group II consisted of 35 non-smoking patients (19 men and 18 women), the average age was 57 (7.8) years. (p = 0.3). All patients underwent a general clinical study, measuring nutritional status using anthropometry and bioimpedancemetry using an Omrom analyzer, as well as determining urine creatinine and albumin. Exclusion criteria were diabetes, kidney disease, and cancer. For statistical data processing, the program “Statistica 10.0” was used.

**RESULTS:** In group I, the SBP was 155 (133; 164) mm Hg, DBP - 99 (87; 106) mm Hg, BMI was 27.9 (24.0; 30.0) kg / m<sup>2</sup>, the percentage of total fat was 22.7 (17.8; 31.7), the percentage of muscle tissue - 35.5 (30.7; 36.8), visceral fat - 9 (6; 15)%, urine creatinine level was 12673 (9944; 15460 ) μmol / L, urine albumin level - 7.9 (3.9; 19.0) mg / mmol. In group II, SBP was 151 (128; 156) mmHg, (p = 0.04) DBP was 94 (85; 103) mmHg (p = 0.04), BMI was 28.3 (24.5 ; 31.1) kg / m<sup>2</sup> (p = 0.6), the percentage of total fat - 39.4 (33.3; 44.5) (p = 0.0001), the percentage of muscle tissue - 25.1 (24, 3; 28.8) (p = 0.000009), visceral fat -11 (7; 14)% (p = 0.2), urine creatinine level was 4832 (3152; 11948) μmol / L (p = 0, 02), urine albumin level - 2.0 (0.6; 4.4) mg / mmol (p = 0.002). An average correlation was found between the content of adipose tissue and urine creatinine (R = -0.7), adipose tissue and urine albumin (R = -0.6) (p <0.05).

**CONCLUSIONS:** A significant increase in blood pressure was found in smokers. Also, smokers with arterial hypertension showed a significant decrease in the content of adipose tissue. The function of the kidneys in smokers was significantly reduced, while at the same time it was revealed that with a decrease in the content of adipose tissue in patients with hypertension, the renal function was significantly worsened.

**CLINICAL IMPLICATIONS:** Arterial hypertension is a leading medical and social problem of our time. Smoking is one of the main factors of cardiovascular risk in patients with hypertension, which triggers systemic inflammation involving vascular endothelium. It is known that systemic inflammation has an effect on the nutritional status and, in turn, also affects the target organ in hypertension - the kidneys, the defeat of which aggravates the course of hypertension.

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