












## Increased body mass could be a risk factor for the development of severe aortic valve stenosis

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**Introduction:** A higher body mass index (BMI) is known to be associated with an increased incidence of aortic valve stenosis (AS).<sup>1,2</sup> We aimed to assess whether obesity is associated with developing severe AS.

**Patients and Methods:** The study included 548 patients admitted for severe AS from September 2020 to August 2024 at the Heart Valve Department of the University Hospital Centre Zagreb. The mean age of the patients was 78.491 ± 8.347 [30-95], 54% were female and the mean BMI was 27.711 ± 5.020 [15.6-44.4]. They were divided into three groups based on BMI: *Group I* consisted of severe AS and BMI ≤ 24.9 kg/m<sup>2</sup>, *Group II* included BMI 25-29.9 kg/m<sup>2</sup>, and *Group III* comprised BMI ≥ 30 kg/m<sup>2</sup>. For the groups of patients, we analyzed renal function by estimated glomerular filtration rate (eGFR) and standard cardiovascular risk factors: arterial hypertension (AH), diabetes mellitus (DM), smoking, and dyslipidemia (DIS). The presence of other valve involvement, coronary artery disease (CAD) and the intervention (TAVR or SAVR) were also analyzed.

**Results:** Among 548 analyzed patients with severe AS, most of them (68.1%) were overweight or obese. A total of 160 patients (29.2%) had a BMI ≥ 30 kg/m<sup>2</sup> (*Group III*) and they were overall younger (mean age: 76.225 ± 8.098) compared to the other two groups (P<0.001). The majority of patients in *Group III* had arterial hypertension (92.5%) and dyslipidemia (79.3%). AH showed a tendency for positive significance (92.5% vs. 91.1% vs. 85.1%, P=0.059). There was no difference in renal function between groups (P=0.708). Despite the lower overall presence of mitral valve regurgitation and stenosis, as well as tricuspid valve regurgitation in obese patients with severe AS (*Group III*), there was no significance compared to the other two groups (P=0.64, P=0.532, P=0.455). Obese patients had more surgical aortic valve repair (SAVR) than patients with lower BMI (30% vs. 19.2% vs. 16%, P=0.005), probably being overall younger.

**Conclusion:** This study suggests that among patients with severe aortic valve stenosis, a higher proportion were overweight and obese, indicating that obesity could be a risk factor for the development of severe aortic valve stenosis.

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### LITERATURE

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