

# Is there an additional risk of ischemic stroke in patients with severe aortic stenosis apart from atrial fibrillation?

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**Introduction:** Severe aortic stenosis (AS) is associated with an increased risk of developing ischemic stroke, but there is a lack of data on the impact of atrial fibrillation (AF).<sup>1-3</sup> Therefore, our aim was to identify variables related to cerebrovascular insult (CVI) in calcified severe AS, apart from AF.

**Patients and Methods:** We retrospectively analyzed a database of 353 patients with severe aortic stenosis who were admitted from September 2020 to July 2023 at the Heart Valve Department of the University Hospital Centre Zagreb. Patients had an average age of 78.7 years ± 8.6 (range: 42-95), with 53.3% being female, and an average BMI of 27.7 ± 5.08 (range: 15.6-44.4). They were divided into four groups: (*Group I*) those with AF and CVI, (*Group II*) those in sinus rhythm (SR) and CVI, (*Group III*) those with AF and no-CVI, (*Group IV*) those in sinus rhythm SR and no-CVI. For the group of patients with AF, we calculated the CHA<sub>2</sub>DS<sub>2</sub>-VASc score.

**Results:** Of the 353 analyzed patients with severe aortic stenosis, 138 (39.1%) had AF with an average CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 4.841 (±1.395). Marked at the time of inclusion patients with AF had anticoagulation therapy. Additionally, the average CHA<sub>2</sub>DS<sub>2</sub>-VASc score in the group of patients with AF and no-CVI was 4.549 (±1.165) and in the group of patients with AF and CVI was 7.063 (±0.929), as expected. When analyzed the group of patients with AF and history of CVI and severe AS (11.6%), there was a significant difference (p 0.008), as in the SR group and CVI, there were 9.3% of patients with a history of CVI (p 0.006). No difference was found comparing a pair of patient groups (SR and AF) with CVI (p 0.490), suggesting an increased risk of stroke in the presence of calcified aortic valve stenosis could be an independent risk factor. Considering other risk factors, in the group with AF and CVI, 93.8% had hypertension, 56.3% had diabetes mellitus (DM), and 25% of patients were smokers. Only DM, as a risk factor, showed a tendency for positive significance between the groups AF and SR (respectively p 0.065, p 0.074).

**Conclusion:** In our group of patients with severe calcified aortic stenosis, there is a significant risk of ischemic stroke, apart from atrial fibrillation at the time of diagnosis, suggesting an increased risk of stroke in the presence of calcified aortic valve stenosis that could be an independent risk factor.

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## LITERATURE

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