

Silent Brain Infarcts After Transcatheter Aortic-Valve Implantation

Almost 75% of patients in a meta-analysis sustained silent brain infarcts after the procedure.

Transcatheter aortic-valve implantation (TAVI) is one of the great recent advances in cardiovascular medicine. However, postprocedure stroke is a hazard of the procedure, perhaps occurring in as many as 10% of patients. Concerns have also been raised about whether silent brain infarcts commonly occur and have long-term clinical sequelae. To describe what is known about silent brain infarcts after TAVI, investigators conducted a systematic literature review and meta-analysis and identified 39 studies involving 2171 people who had a paired diffusion-weighted MRI before and after the TAVI procedure.

Overall, 74% of the patients had a new silent brain infarct, and 5% had a new focal neurological deficit. Having a cerebral embolic protection device was linked to a nonsignificantly higher risk for a silent brain infarct. Patients with a silent brain infarct averaged four new lesions, with a mean total volume of 426 mm³. The lesions were commonly spread across multiple vascular territories. Diabetes and chronic renal disease were associated with higher risks for silent brain infarcts. Most analyses of postprocedural cognitive function were short term, with a mean follow-up of 10 days.

COMMENT

This study signals a concern about TAVI and indicates several actions that we need to take — seek strategies to reduce risk, fully inform patients of risk, and perform more research to determine the long-term consequences of these silent brain infarcts. We also need comparable studies in people who undergo aortic-valve replacement.

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