

Letter by Grocott Regarding Article, “Evolution of Cognitive Function After Transcatheter Aortic Valve Implantation”

To the Editor:

The recent study by Schoenenberger et al¹ outlining the evolution of cognitive function after transcatheter aortic valve implantation attempts to document the changes that can occur in cognition in these often sick patients. This largest study to date of transcatheter aortic valve implantation–associated changes in cognition using the Mini-Mental Status Examination identified what seems to be some interesting findings, that is, a subset of patients seems to experience cognitive deterioration, but a distinct subgroup also seems to improve its cognitive function after transcatheter aortic valve implantation. The authors speculate that the improvement is likely the impact of more optimal postprocedural hemodynamics because the patients with a greater baseline impairment in the Mini-Mental Status Examination also had a higher grade of aortic stenosis.

Whereas it is difficult to argue with the intuitive logic that those whom have impairment in their baseline cognitive function as a consequence of the low cerebral perfusion state induced by critical aortic stenosis might also have greater improvement in both once the low flow state is relieved, the true understanding of the cause of the cognitive deterioration in the other subset is much less certain. Indeed, one of the principal difficulties in studying cognition after cardiac procedures is that unless the patient’s normal cognitive trajectory² is accounted for, that is, all of us continue to lose a variable (perhaps genetically programmed³) element of cognitive function over time irrespective of any valve replacement procedure, it is uncertain whether the changes in cognition shown were different from those that would have been expected based on the usual age-related downward cognitive trajectory alone. Importantly, had they taken into account these cognitive trajectories potentially by including a group of nonprocedural controls, the changes that they saw may have been far greater than they had anticipated or, conversely, they may simply have not been there at all.

So whereas patients undergoing transcatheter aortic valve implantation have previously been suggested to experience various

neurological sequelae, including stroke⁴ and delirium,⁵ and changes in cognition seem an intuitive consequence, the confidence one can have based on the data presented by Schoenenberger et al¹ is somewhat uncertain.

Disclosures

None.

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