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### Delirium after transcatheter aortic valve implantation (TAVI) under general anaesthesia: incidence, predictors and relation to long-term survival

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**Background:** Patients undergoing Transcatheter Aortic Valve Implantation (TAVI) are at risk of postoperative delirium (POD). Prospectively collected data on delirium after TAVI are scarce.

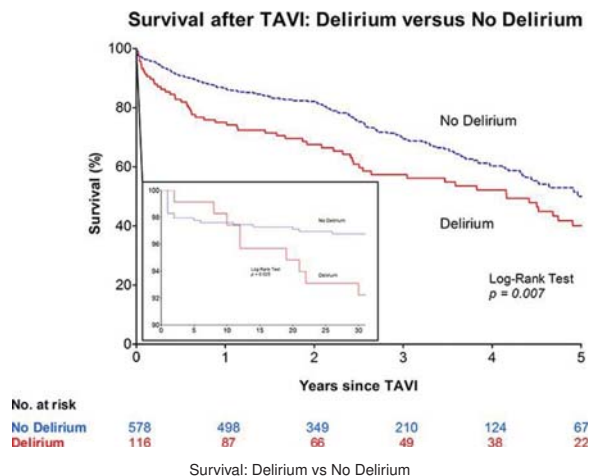
**Purpose:** Aim of this study is to report the incidence and risk factors of POD after TAVI under general anaesthesia. Also we assessed the relation of POD with clinical outcome and short- and long-term survival.

**Methods:** POD was assessed prospectively in all consecutive patients treated with TAVI in our centre between 2008 and 2017, according to the Diagnostic and Statistical Manual of Mental Disorder (DSM)-IV criteria. TAVI was performed under general anaesthesia in all patients. Outcome was reported according to the updated VARC2-criteria. Survival status was checked by consulting the Municipal Civil Registries.

**Results:** POD was observed in 16.5% (116/703) of all patients. Stroke and new onset of atrial fibrillation were more often observed in patients

with POD (6.9% vs. 1.9%,  $p=0.007$  and 12.1% vs. 5.1%,  $p=0.005$ , respectively). Independent preoperative predictors of POD were prior delirium (OR 2.56 [95% CI: 1.52–4.31],  $p<0.001$ ), aortic valve area (AVA)  $<0.75$  cm<sup>2</sup> (OR 2.39 [1.53–3.74],  $p<0.001$ ), age (1.08 [1.04–1.12],  $p<0.001$ ) and BMI (0.94 [0.90–0.99],  $p=0.018$ ). POD was the strongest independent predictor of long-term mortality (HR 1.91 [1.36–2.70],  $p<0.001$ ) and was associated with impaired 30-day survival (92.2% vs. 96.8%,  $p=0.034$ ) as well as 5-year survival (40.0% vs. 50.0%,  $p<0.001$ ).

**Conclusion:** One-in-six patients suffered from POD after TAVI under general anaesthesia. Prior delirium and more calcified aortic valve were the strongest independent predictors of POD. POD was the strongest predictor of long-term mortality and was associated with impaired short- as well as long-term survival.



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