Effect of renin angiotensin system blockade following transcatheter aortic valve replacement is dose dependent

J. Ledwoch[1], I. Olbrich[2], F. Poch[2], R. Thalmann[2], C. Fellner[2], A. Stundl[2], C. Bradaric[2], K.L. Laugwitz[2], C. Kupatt[2]

[1]Klinikum Neuperlach, Klinik fuer Kardiologie, Pneumologie und Internistische Intensivmedizin, Munich, Germany; [2]Klinik und Poliklinik für Innere Medizin I, Klinikum Rechst der Isar, Germany

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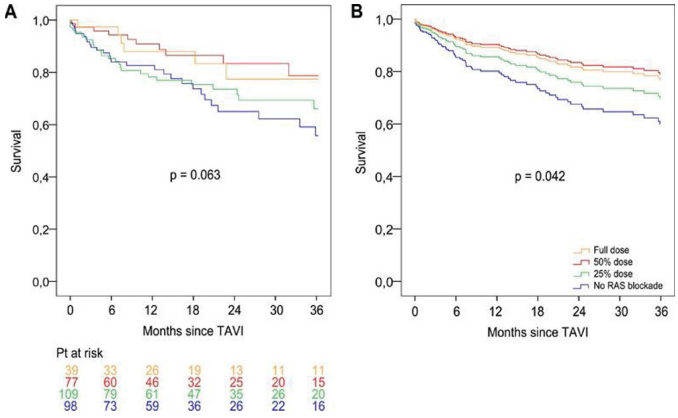
Background: There is growing body of evidence from retrospective studies that inhibition of the renin angiotensin system (RAS) improves outcome after transcatheter aortic valve replacement (TAVR). However, it remains unknown whether the effect of RAS blockade treatment on survival and left ventricular (LV) remodeling after TAVR is dose dependent.

Purpose: To assess clinical outcome and remodeling dependent on different RAS doses after TAVR.

Methods: Patients who were enrolled into our observational TAVR study at our institution were retrospectively assessed according to different dosed of RAS blockade: Group1 (no RAS blockade), group 2 (25% of the maximum daily dose), group 3 (50% of the maximum daily dose) and group 4 (100% of the maximum daily dose).

Results: A total of 323 patients between January 2015 and September 2019 were included. Patients with higher doses of RAS blockade showed a trend towards lower all-cause mortality at 3-year follow-up (56% with no RAS blockade vs. 66% with the 25% dose vs. 79% with the 50% dose vs. 78% with the full dose; p=0.063). After adjustment for baseline characteristics the difference in survival was significant (p=0.042). Besides NYHA class ≥ III and left ventricular ejection fraction (LV-EF) RAS blockade dose was identified as independent predictor for all-cause mortality (HR 0.72 [95% CI 0.54–0.97]; p=0.03). With respect to regression of LV mass index after TAVR the only significant change was observed in patients receiving the full dose.

Conclusion: The present study showed for the first time that the impact of RAS blockade treatment on clinical outcome and LV remodeling after TAVR is dose dependent.



Survival dependent on RAS dosis