Presepsin acurately predicts mortality in patients undergoing transcatheter aortic valve implantation (TAVI)

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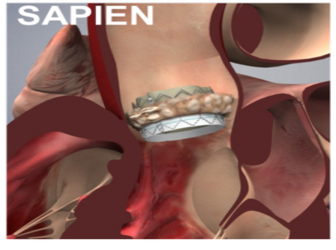

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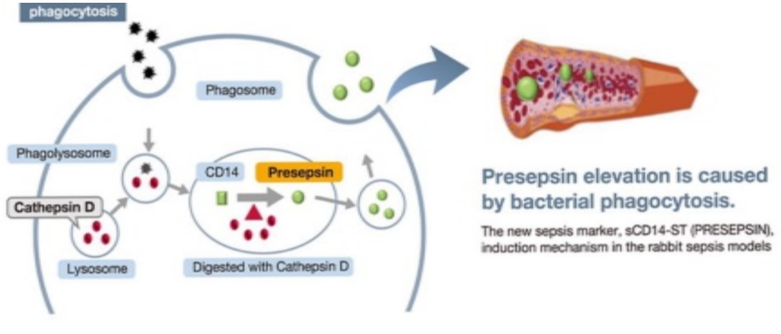
Background

Until now, no reliable biomarker has become available for short- or long-term outcome prediction in patients undergoing trans-catheter aortic valve implantation (TAVI). Our goal was to investigate whether presepsin is also suited for risk assessment in TAVI patients.

Objective

The aim of this study was to assess whether Presepsin, a novel marker indicative for sepsis, has prognostic value in the postoperative outcome in patients after transcatheter aortic valve implantation (TAVI).



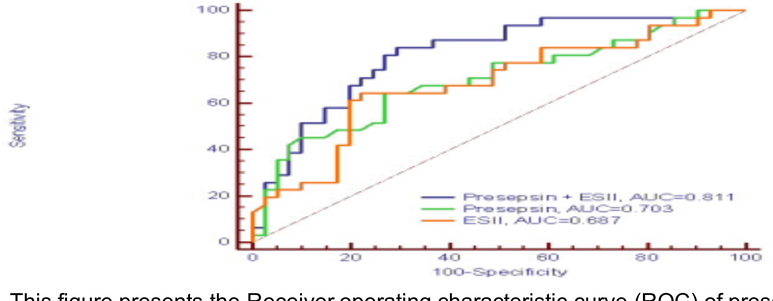
Methods

We included 72 patients undergoing TAVI in this single-center, observational study. We matched 31 patients who had died within 12 months after TAVI with 41 surviving patients with regards to age and major risk factors. Baseline presepsin levels were correlated to the hsTNT, the NT-proBNP, the ES II as well as to mortality after one year. Patients were selected in a non-randomised fashion. From all patients clinical data was reported and blood assessment was performed before and immediately after TAVI. From all patients informed consent is obtained and approval by the local ethics committee was achieved.

Results

At baseline, mean presepsin level for the entire group was 160ng/l. The baseline median presepsin level for the patients alive after one year (n=41) was 133ng/l. However, the baseline mean presepsin level for patients that had died in hospital (n=31) was 187ng/l. These patients also had a significantly higher ES II compared to the survivors (6,7 vs. 3,6 respectively p= 0,0068).

	AUC	SE [a]	95% CI [b]
Presepsin+ESII	0,811	0,0515	0,710 to 0,912
Presepsin	0,703	0,0637	0,579 to 0,828
ESII	0,687	0,0647	0,560 to 0,814



This figure presents the Receiver operating characteristic curve (ROC) of presepsin and the various risk scores for the prediction of mortality after TAVI . Presepsin provided the best result, with an area under the ROC curve of 0,703 vs. ES II with an AUC of 0,687. Comparing the predictive power of presepsin in addition to ES II showed the best predicitve result with an AUC of 0,811.

Conclusion

In summary, elevated presepsin levels are associated with significantly increased mortality after TAVI. Combining presepsin with ES II provides additive predictive value of risk stratification.