

Comparative Outcomes and Predictors in Transcatheter Aortic Valve Implantation: A SEV vs BEV Analysis, data from the GREEK TAVI REGISTRY

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Background

- TAVI offers treatment for high-risk patients with severe aortic stenosis.
- Self-expanding valves (SEVs) and balloon-expandable valves (BEVs) are widely used, yet comparative outcome data — particularly on complications — remain crucial for valve selection.
- Our aim was to compare baseline characteristics, delays, and outcomes between SEV and BEV recipients, and assess the impact of valve type and interactions on complications and mortality.

Methods

- A retrospective analysis of 4,028 TAVI patients
- Data from 24 Greek centers, from 2015 to 2023.
- Patients were grouped into SEV (n=3,497) and BEV (n=531).
- Waiting time, risk scores, and post-procedural events were analyzed via t-tests and logistic regression.

Results

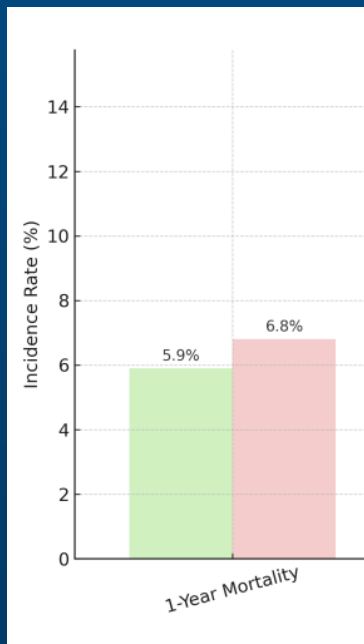
	Self-expanding Valves	Balloon-expanding Valves
Age	81.39 (6.43)	78.84 (8.63)
Gender (% Male)	52.7%	55.1%
Coronary Artery Disease (% Yes)	45.4%	50.8%
PCI History (% Yes)	24.2%	28.0%
CABG History (% Yes)	18.1%	24.6%
Waiting Time (days)	136.58 (127.65)	117.71 (115.85)
STS PROM	6.00% (4.96)	6.00% (3.75)
Log EuroSCORE	25.00% (11.00)	25.00% (13.32)
EuroSCORE II	7.00% (4.51)	8.00% (5.10)

SEV patients were older (81.1 vs. 79.5 years, $p<0.001$); gender and CAD rates were similar.

One-year mortality was comparable (SEV: 10.8%, BEV: 9.6%, $p=0.83$).

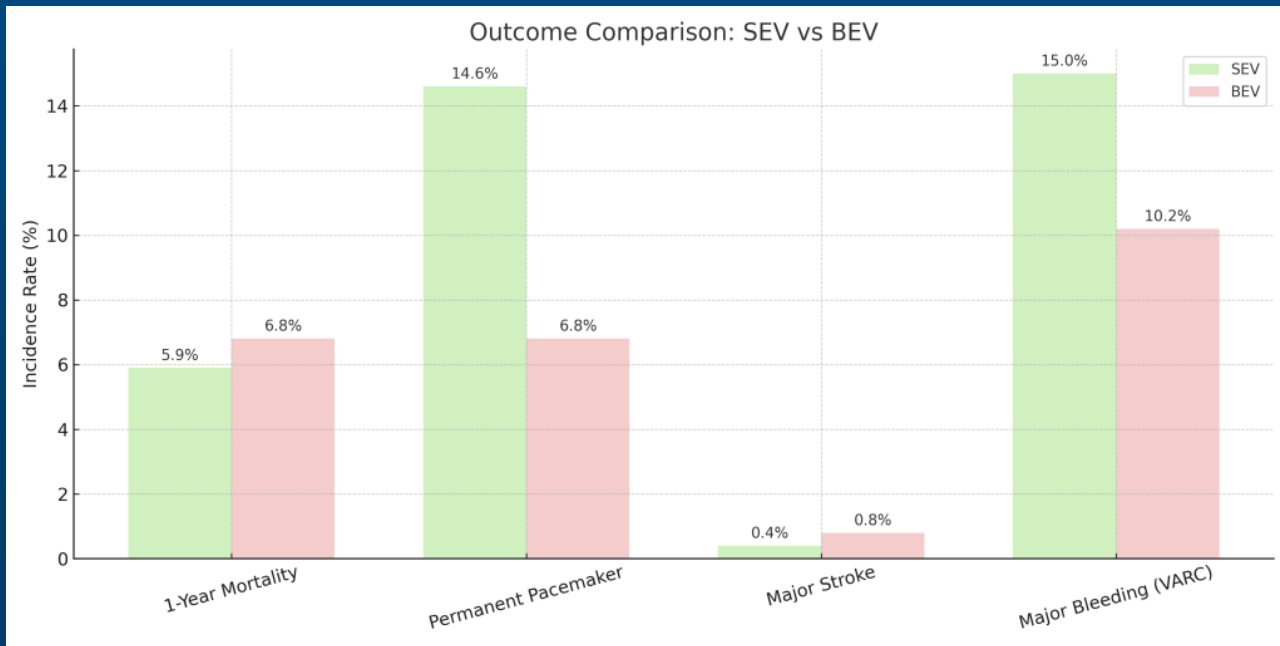
Valve type was not an independent predictor of mortality while STS PROM and Euroscore II were ($p=0.023$ and $p<0.001$).

Results



One-year mortality was comparable (SEV: 10.8%, BEV: 9.6%, $p=0.83$).

Results



SEVs were associated with higher pacemaker ($p < 0.001$) and bleeding rates ($p = 0.003$). No significant differences were found for stroke, infection, or surgical conversion.

Conclusion/Summary/Take-home Message

- SEV and BEV show similar 1 year mortality outcomes, valve type was not an independent predictor of mortality.
- In our cohort SEV were used more frequently, mainly due to operators preferences and compensation legislation in Greece
- Both type of valves have an excellent safety profile
- Valve selection should be personalized for each individual in order to achieve optimal result

