

19
studies

2,541
patients

1975-2020
implant era

20 years
maximum follow-up

1,950 vs 591
porcine vs bovine

Background and aim

Bioprostheses are preferred in the tricuspid position to limit thrombosis and bleeding. Late durability remains uncertain: published series are small and heterogeneous. Aim: create an IPD-level benchmark for survival, reoperation, and SVD.

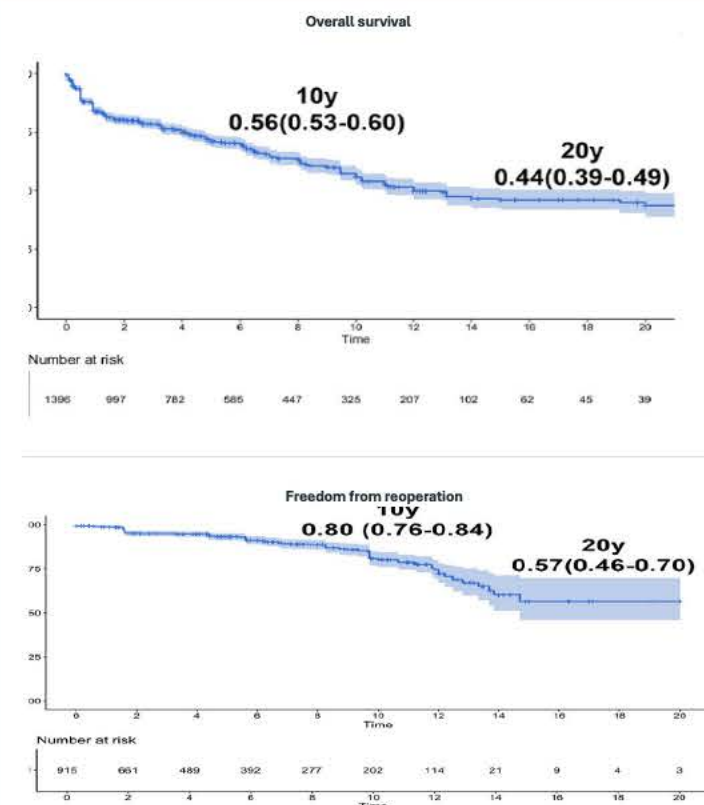
Methods

PRISMA-compliant, PROSPERO-registered meta-analysis. Embase, Medline, Cochrane CENTRAL, plus hand-searching. Included studies: ≥ 50 patients, ≥ 3 years mean follow-up, KM curves with risk tables. IPD reconstructed from KM curves; KM, log-rank, and Firth-penalised Cox models.

Pre-specified subgroups

Isolated vs combined surgery | Porcine vs bovine tissue | Implantation era

Main outcomes



Survival benchmark

56% at 10 years
(95% CI 53-60)

44% at 20 years
(95% CI 39-49)

Survival declines markedly over two decades, likely reflecting comorbidity more than prosthesis type.

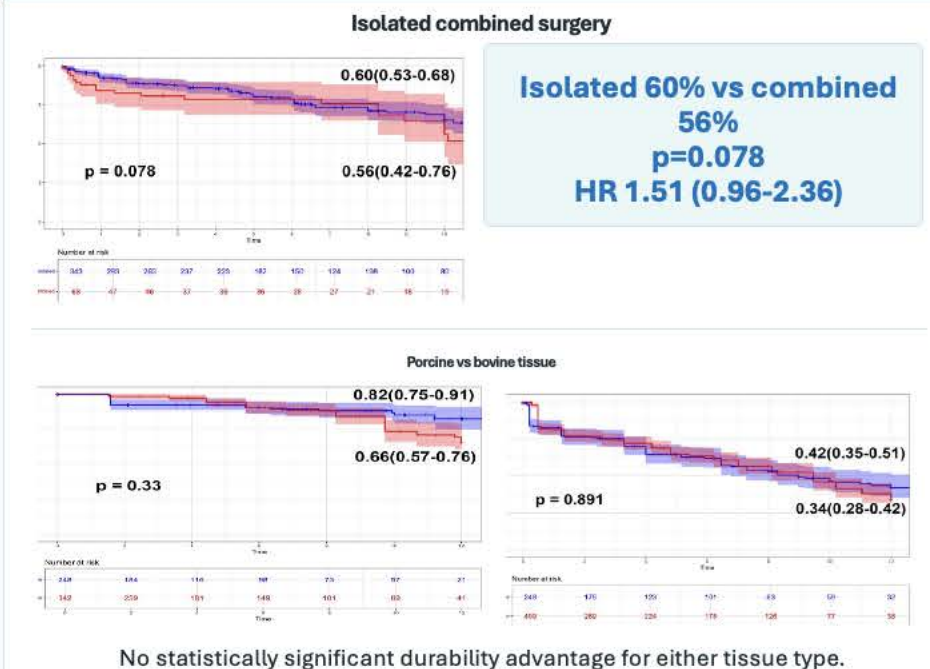
Durability benchmark

80% at 10 years
(95% CI 76-84)

57% at 20 years
(95% CI 46-70)

Reoperation-free survival deteriorates mainly after the first decade.

Subgroup findings



Take-home

After 10 years, surveillance and valve-in-valve readiness become central.

Conclusion

Bioprosthetic tricuspid valve replacement provides an acceptable long-term platform, but survival and freedom from reoperation decline substantially over two decades. These data support lifetime management: index bioprosthesis, structured surveillance after 10 years, and planned transcatheter valve-in-valve when degeneration occurs.

**Bioprosthesis now
transcatheter ViV later**