18th Gulf Heart Association Conference

November 12-14, 2026
Oman Exhibition & Convention Center
Muscat, Sultanate of Oman



POSTER PRESENTATION

Aortic Valve Replacement in Systemic Sclerosis: National Epidemiology, a Test of the Premature-Onset Hypothesis, and In-Hospital Outcomes versus Propensity-Matched Controls

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BACKGROUND

- Case series suggest aortic stenosis in systemic sclerosis (SSc) is commoner, faster and earlier than degenerative disease.
- Fewer than 50 treated patients are published; no population-level study of aortic valve replacement (AVR) exists.

AIMS

- Describe national AVR epidemiology in SSc.
- Test the premature-onset hypothesis.
- Compare TAVR outcomes with matched controls.

METHODS

- **NIS 2016-2022,** isolated AVR; outcome-blind feasibility gate.
- **30 SAVRs only:** SSc vs 1:4 matched controls within TAVR, 3 estimators.
- **Premature onset:** each group vs its own hospitalized population.

41,010,691	adult discharges
174,869	aortic valve replacement
123,410	isolated AVR
232	with SSc (202 TAVR, 30 SAVR)
199 vs 796	TAVR, 1:4 matched

KEY RESULTS

232
AVRs in SSc
(202 TAVR, 30 SAVR)

~166 / yr
national estimate
(1,160 weighted)

74% → 91%
transcatheter share
2016 → 2022

−7.4 y
difference in age gaps
(premature onset)

Counts below 11 suppressed per HCUP rules.

Figure 1. Premature onset: age gap to own source population

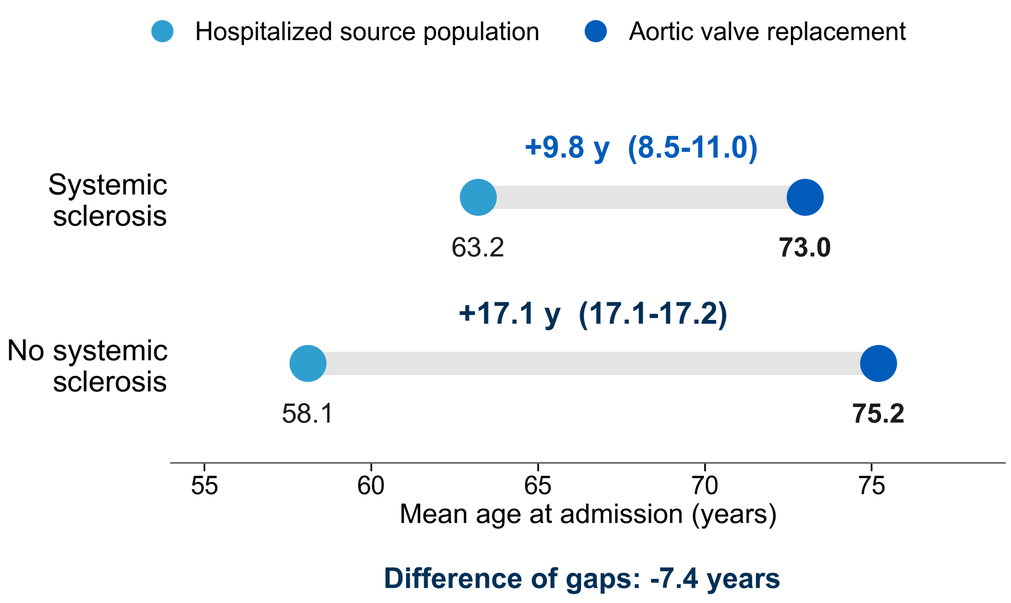


Figure 2. Estimator dependence after TAVR (199 SSc vs 796 controls)

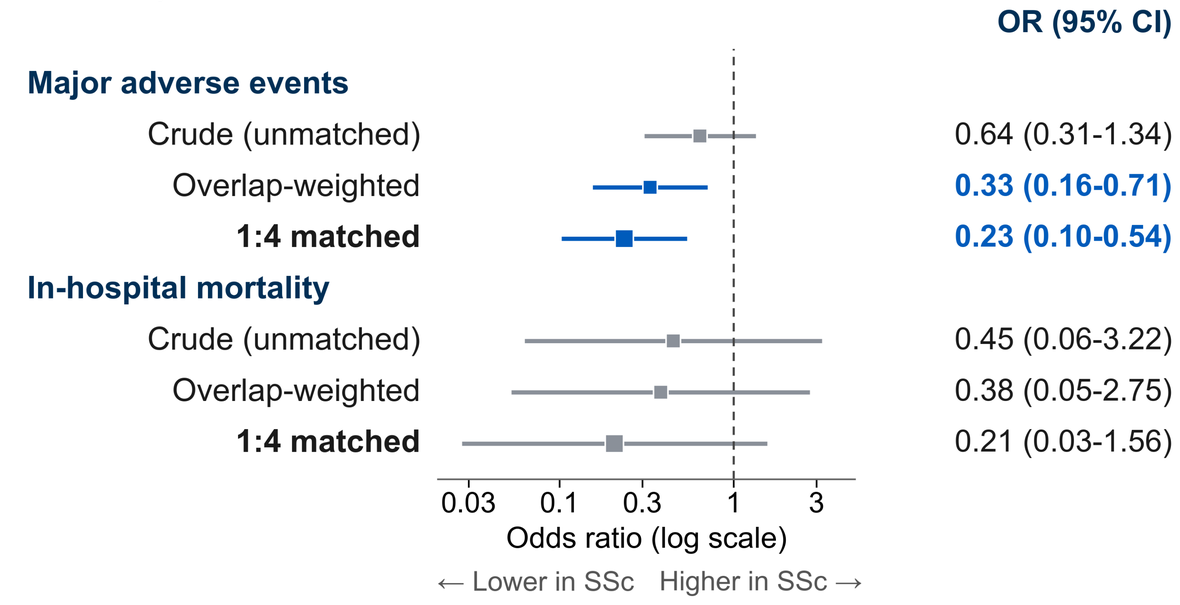
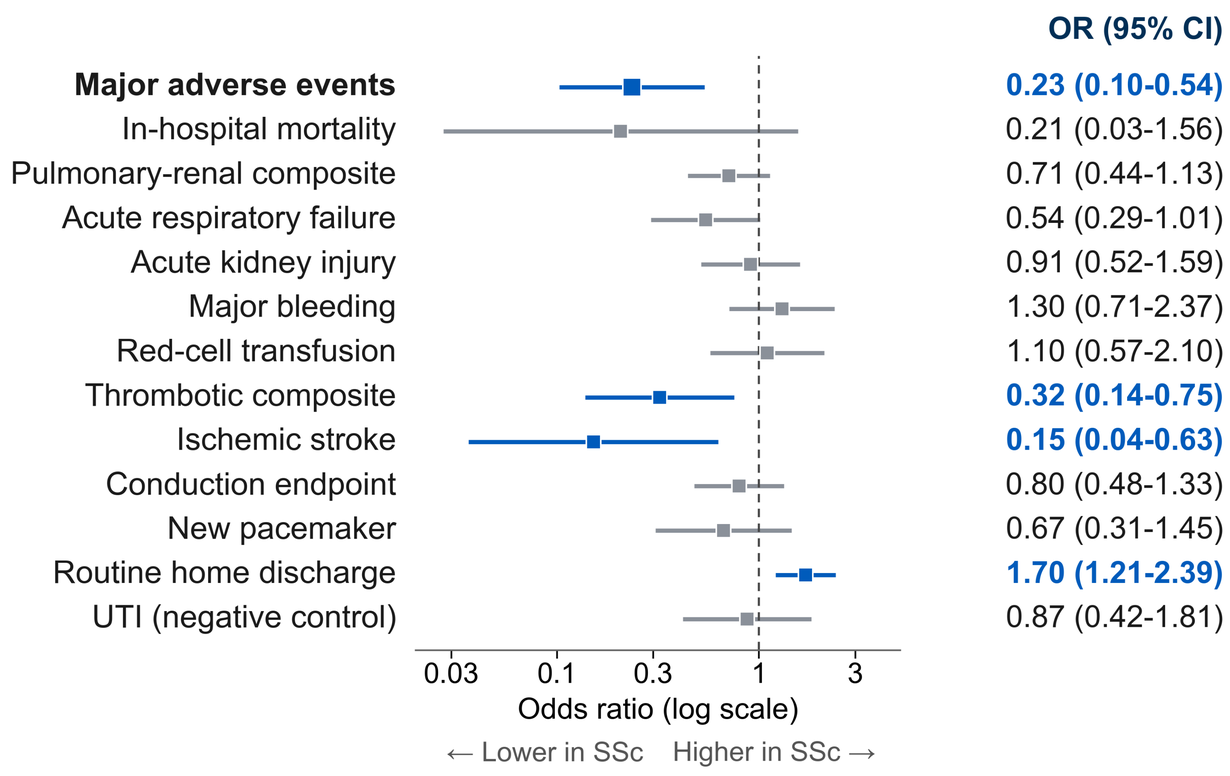


Figure 3. All in-hospital outcomes after TAVR, SSc vs 1:4 matched controls



READING THE OUTCOMES

- **Matched odds** of major adverse events, thrombotic events and ischemic stroke appeared lower in SSc.
- **But estimators disagreed:** crude OR 0.64 (0.31-1.34) vs matched 0.23.
- **Matched controls** had 2-3 times the event rates of all TAVR recipients, indicating comparator selection.
- **No causal interpretation** is offered; a multinational registry is needed.

LIMITATIONS

Coded diagnosis without disease activity; surgical arm too small to compare; index-admission outcomes only.

CONCLUSIONS

- AVR in SSc is performed about 165 times a year in the United States and is now predominantly transcatheter.
- SSc patients reach valve replacement substantially earlier relative to their own population: first population-level evidence for premature onset.
- Matched outcome estimates are estimator-dependent (matched controls were atypically high-risk) and should not be read causally.

References Denton CP, Lancet 2017;390:1685. Gad MM, Eur Heart J Open 2022;2:oeac024. Otto CM, JACC 2021;77:e25. Khera R, JAMA 2017;318:2011.

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