

Renin-Angiotensin System Inhibitors Following TAVR: An Updated Meta-Analysis of 34,987 Patients

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Disclosure of Relevant Financial Relationships

I, Paulo Tartuce, DO NOT have any financial relationships to disclose.



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Background

- Aortic stenosis leads to chronic pressure overloads, resulting in LV remodeling, hypertrophy, and fibrosis
- These changes increase heart failure risk
- Although TAVR improves outcomes, late complications, particularly mortality and readmissions remain significantly relevant

Background

Can RAS inhibitors reduce these adverse outcomes?

Background

ORIGINAL RESEARCH

Ramipril After Transcatheter Aortic Valve Implantation in Patients Without Reduced Ejection Fraction: The RASTAVI Randomized Clinical Trial

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Antonio Muñoz-García, MD, PhD; Raquel Del Valle , MD; Ander Regueiro, MD, PhD; Borja Ibáñez , MD, PhD;
Rafael Romaguera , MD; Carlos Cuellas Ramón, MD; Bruno García , MD; Pedro L. Sánchez, MD;
Javier Gómez-Herrero , MD; Jose R. Gonzalez-Juanatey, MD, PhD; Gabriela Tirado-Conte , MD;
Francisco Fernández-Avilés, MD, PhD; Sergio Raposeiras , MD; Ana Revilla-Ordeña , MD;
Javier López-Díaz , MD; Itziar Gómez , MSc; Manuel Carrasco-Moraleja , MSc; J. A. San Román , MD, PhD

Amat-Santos et al., 2024

Background

- Long term outcomes after TAVR can be better
- Post-TAVR medical therapy evidence is limited/conflicting
- *RAS* inhibitors benefit other cardiac conditions

Methods

Literature search



Embase®



*Statistical
analysis*



*Studies comparing RASI vs no-RASI
use following TAVR*

Results

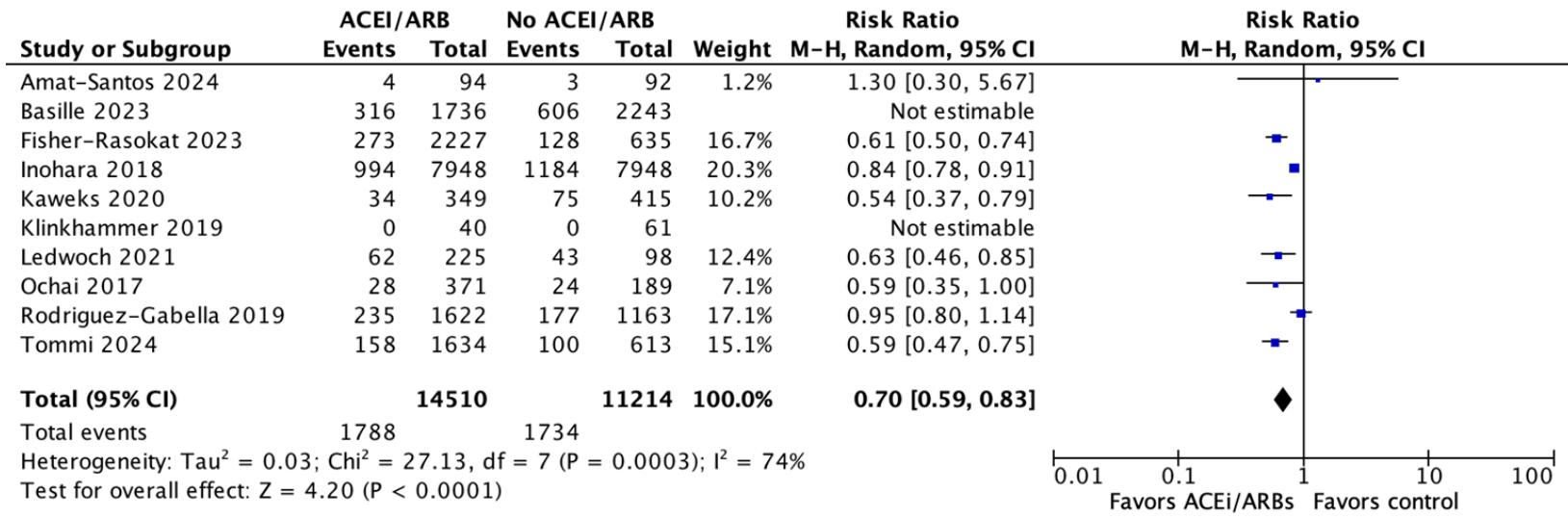
- 11 studies comprising 34,987 patients
- 16,593 (47.7%) received RASI therapy

Endpoints:

- All-cause death
- Cardiovascular death
- Heart failure rehospitalization
- Myocardial infarction

Results

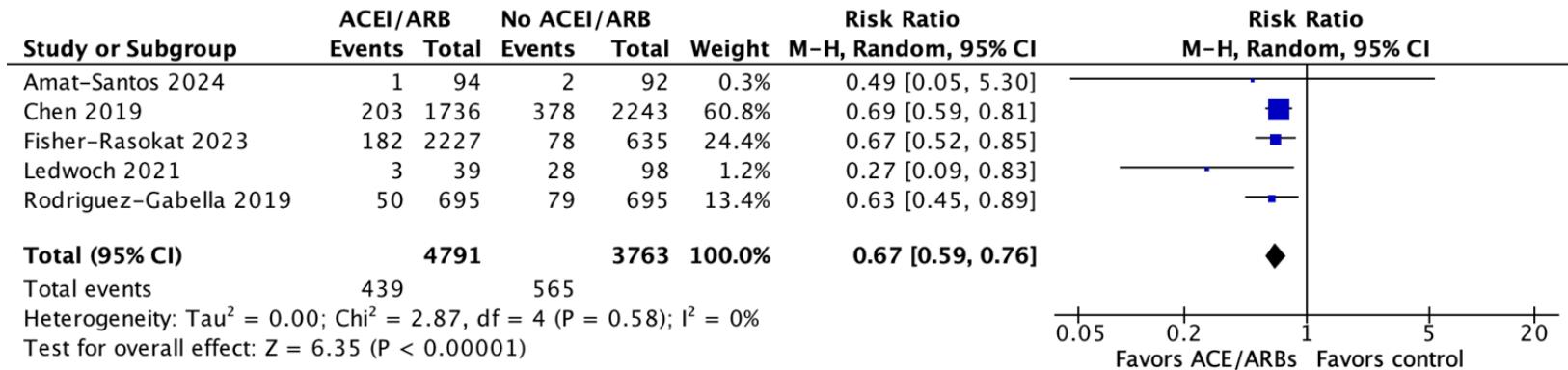
All-cause death



RAS inhibitor therapy was associated with a 30 percent risk reduction in all-cause mortality

Results

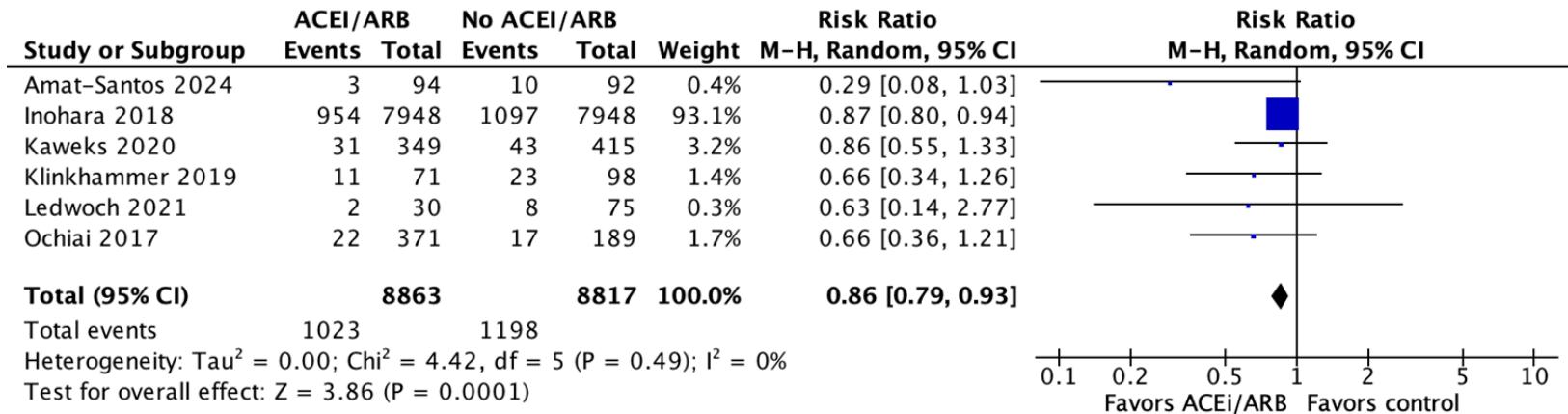
Cardiovascular death



Cardiovascular death was reduced by 33 percent with RAS inhibitor use

Results

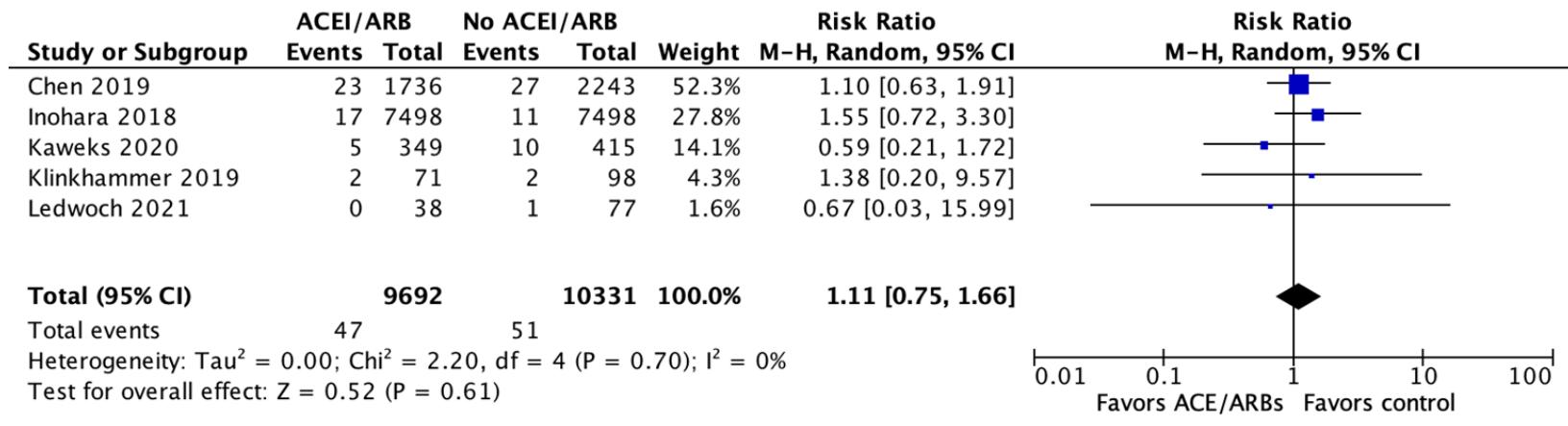
Heart failure rehospitalization



RASI therapy reduced in 14% the risk of heart failure readmission

Results

Myocardial infarction



No significant differences between groups

Large Registries

- PARTNER 2
- EffectTAVI

Future Perspectives

ORIGINAL ARTICLE

Dapagliflozin in Patients Undergoing Transcatheter Aortic-Valve Implantation

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Raposeiras-Roubin et al., 2025

Limitations

- The observational design of all included studies constrains the evaluation of endpoints without the influence of confounding factors
- Variability in follow-up durations across the studies
- The lack of individual patient data restricts a more granular assessment of key variables, such as use of beta-blockers history, which could influence directly in cardiac reverse remodeling.

Conclusions

- RAS inhibitors for the management of patients following TAVR is associated with reduced risk of both all-cause and cardiovascular mortality, and heart failure readmission.
- The risk of myocardial infarction was comparable across groups
- These findings support the integration of RAS inhibition into post-TAVR medical therapy