

Mid-Term and Long-Term Clinical Outcomes Following Hybrid Coronary Revascularization Versus Off-Pump Coronary Artery Bypass: A Meta-Analysis

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BACKGROUND

While numerous meta-analyses have explored the outcomes of various coronary revascularization strategies, the majority of existing literature predominantly concentrates on short-term results. Recognizing the limited focus on **mid-** and **long-term outcomes**, this meta-analysis aims to contribute to the understanding of the comparative effectiveness of **hybrid coronary revascularization** (HCR) and **off-pump coronary artery bypass** (OPCAB) procedures in these extended timeframes.

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OBJECTIVE

To evaluate the sustained **clinical efficacy** of HCR versus OPCAB beyond the short-term period, contributing to informed clinical decision-making in cardiovascular care.

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METHODS

Databases Searched

MEDLINE

EMBASE

OVID

Time Frame

1990 – 2024

Analysis Technique

Bayesian meta-analysis with random effects model

Primary outcomes

Mid-Term Mortality (1 – 5 years)

Long-Term Mortality (> 5 years)

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RESULTS



13 studies



11,362 patients

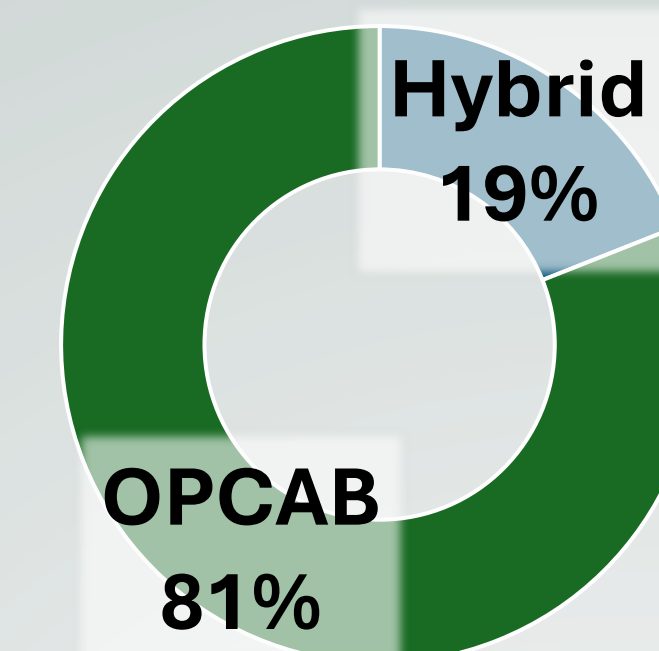
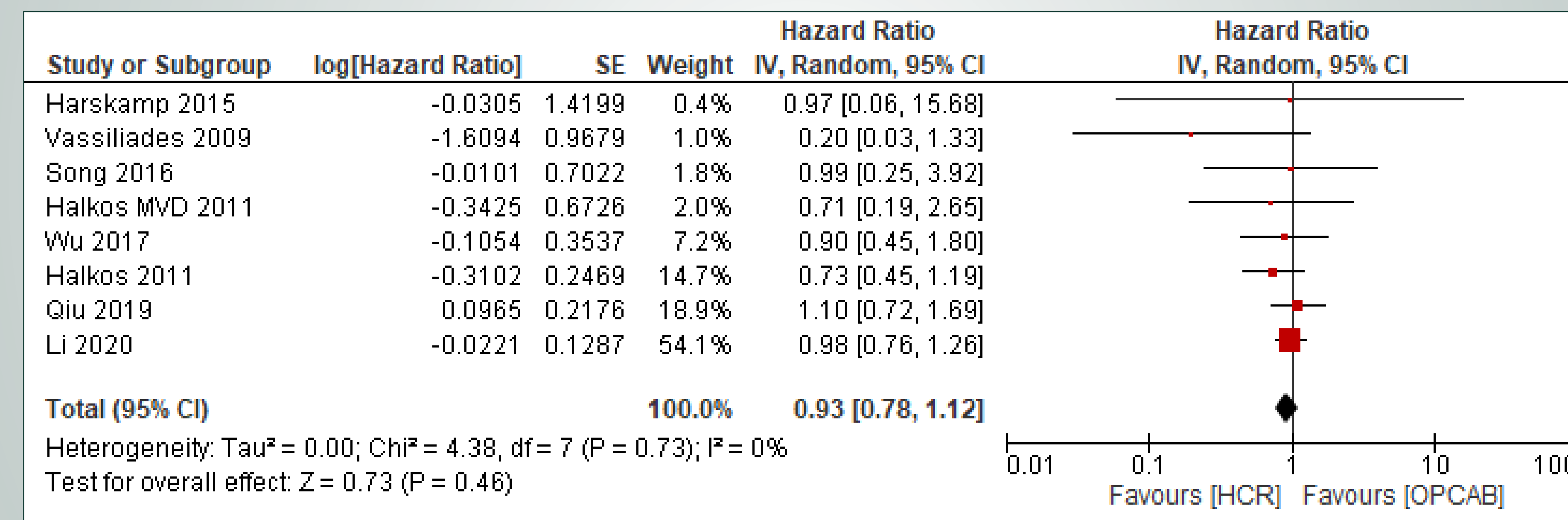


Table 1: Number of patients included

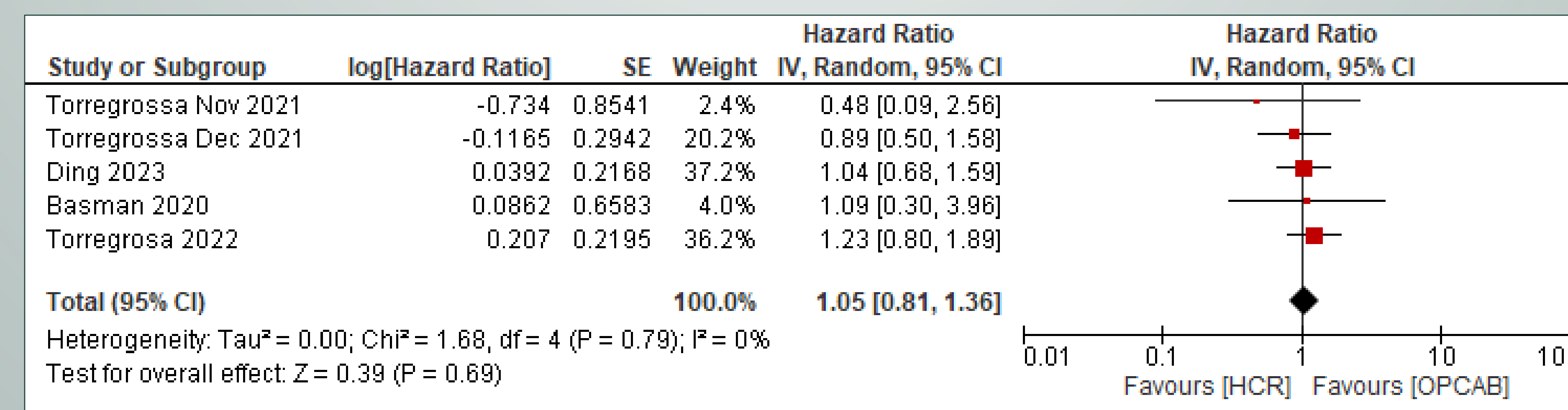
Outcome	Hybrid	OPCAB
Mid-term mortality	1 084	6 794
Long-term mortality	1 019	2 465

OPCAB = off-pump coronary artery bypass

Mid-Term Mortality



Long-Term Mortality



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DISCUSSION

Key Outcomes

- **No significant demographic** differences between the HCR and OPCAB groups;
- **Comparable mid-term and long-term** outcomes between HCR and OPCAB.

Clinical Implications

- HCR and OPCAB show **similar** sustained **clinical efficacy**;
- These findings support the use of both techniques in long-term cardiovascular care.

Limitations

- Potential **biases** in the included studies;
- Constraints in **available data** necessitate further research.

Mid-Term Mortality

HR 0.93, 95% CI: 0.78 – 1.12, p = 0.46

Long-Term Mortality

HR 1.05, 95% CI: 0.81 – 1.36, p = 0.69

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CONCLUSION

- HCR and OPCAB demonstrate **similar mid- and long-term mortality** rates, indicating comparable clinical outcomes.
- Further studies are needed to validate these findings and adapt to advancements in cardiovascular care.