Invasive versus conservative management in spontaneous coronary artery dissection: a meta-analysis and meta-regression study

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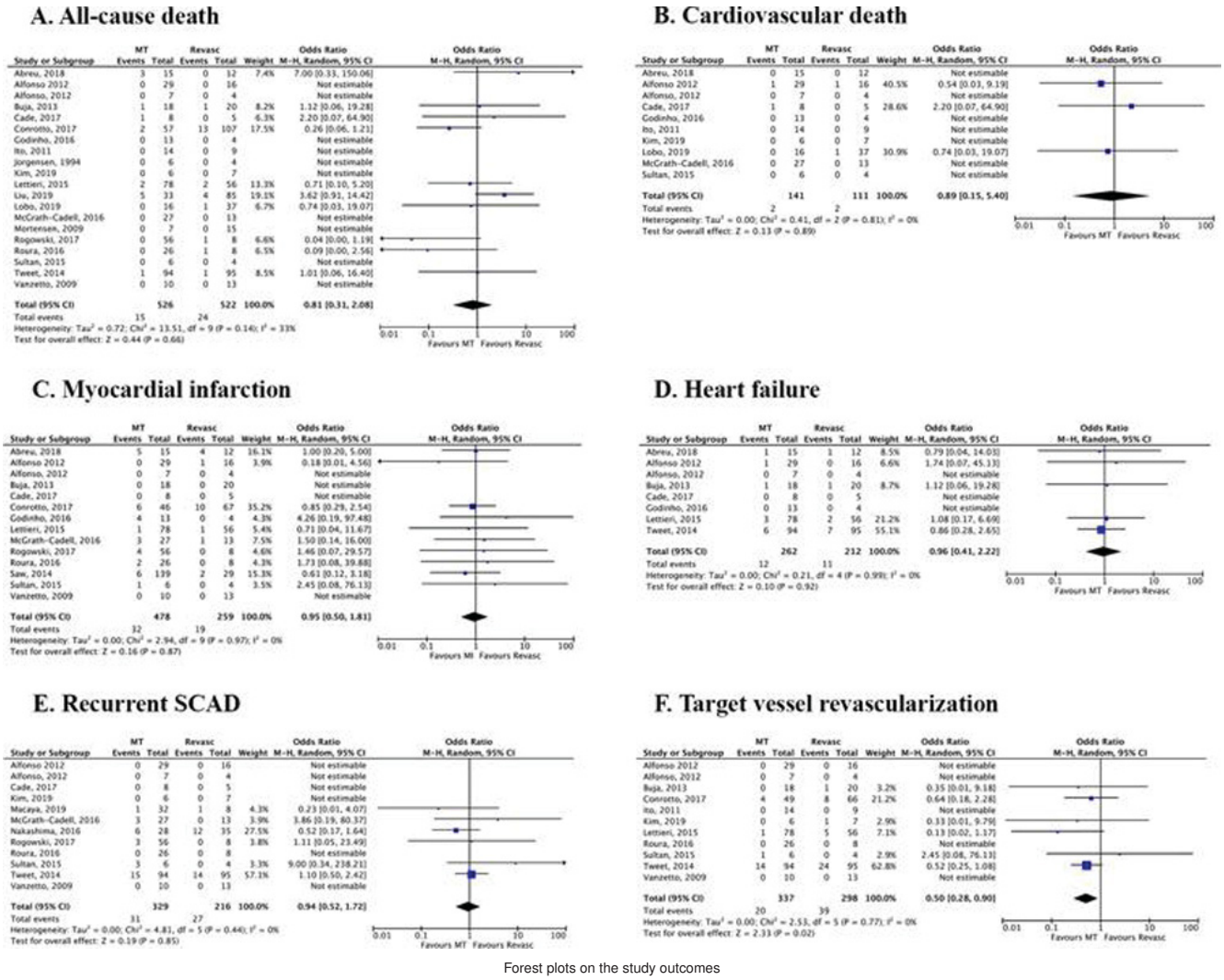
Background: There is a paucity of data regarding the best treatment for spontaneous coronary artery dissection (SCAD).

Purpose: To compare the prognostic impact of conservative versus invasive treatment in patients with SCAD.

Methods: We systematically searched the literature for studies evaluating the comparative efficacy and safety of invasive revascularization versus medical therapy for the treatment of SCAD from 1990 to 2019. Random-effect meta-analysis was performed comparing clinical outcomes between the two groups.

Results: 24 observational studies with 1720 patients were included. After 28±14 months, a conservative approach reduced target vessel revascularization rate compared with invasive treatment (OR=0.50; 95% CI 0.28–0.90; P=0.02). No difference was found regarding all-cause mortality (OR=0.81; 95% CI 0.31–2.08; P=0.66), cardiovascular mortality (OR=0.89; 95% CI 0.15–5.40; P=0.89), myocardial infarction (OR=0.95; 95% CI 0.50–1.81; P=0.87), heart failure (OR 0.96; 95% CI 0.41–2.22; P=0.92) and SCAD recurrence (OR=0.94; 95% CI 0.52–1.72; P=0.85). The meta-regression analysis suggested that male gender, diabetes mellitus, smoking habit, prior coronary artery disease, left main coronary artery involvement and lower ejection fraction at admission are related with higher overall mortality, whereas SCAD recurrence was higher among patients with fibromuscular dysplasia.

Conclusion: A conservative approach provides similar clinical outcomes and lower target vessel revascularization rates compared to an invasive strategy in the setting of SCAD; therefore, when feasible, it should be preferred in this scenario.



Forest plots on the study outcomes