

Beyond Angiography: Cardiac Rehabilitation After Spontaneous Coronary Artery Dissection – A Systematic Review and Meta-Analysis

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SUMMARY OF KEY RESEARCH FINDINGS

Spontaneous coronary artery dissection (SCAD) is increasingly recognised as an important cause of acute coronary syndrome, particularly in younger women, yet the road to recovery for these patients extends well beyond the coronary angiogram. Many continue to experience chest pain, reduced confidence to exercise, and psychological distress long after the acute event, and evidence to guide secondary prevention in this population remains limited.

To address this gap, this systematic review and meta-analysis assessed quantitative outcomes in patients with SCAD who participated in cardiac rehabilitation (CR) programmes.¹ Five observational studies encompassing 953 patients (459 in CR, 494 without) met the inclusion criteria. CR participation was associated with a meaningful improvement in exercise capacity, with pooled treadmill performance increasing by 1.06 metabolic equivalent of task, and peak oxygen uptake rising by

2.89 mL/kg/min. Chest pain prevalence fell substantially across studies, with relative reductions ranging from 41–80%. Psychological outcomes also improved, with reductions in both depressive symptoms (Patient Health Questionnaire-9 [PHQ-9]) and anxiety scores (General Anxiety Disorder-7 [GAD-7]). Reassuringly, pooled analysis of hard clinical endpoints, including major adverse cardiovascular events, revascularisation, and recurrent myocardial infarction, showed no significant differences between CR participants and non-participants, though follow-up was short and event numbers were low.

WHAT CHALLENGE DOES THIS ADDRESS?

SCAD management guidelines have historically focused on the acute phase: recognising the diagnosis angiographically, avoiding unnecessary stenting, and determining whether to use conservative or invasive treatment. What happens after discharge has received comparatively little attention. Because SCAD disproportionately affects younger, otherwise healthy women, many of whom were physically active before their event, the psychological and functional aftermath can be profound and is often under-addressed in routine follow-up. Clinicians have also been understandably cautious about referring patients with SCAD to standard CR pathways, given historical uncertainty about the safety of exercise training in a population with a dissected (rather than atherosclerotic) vessel. This review responds directly to that uncertainty by consolidating the available comparative evidence in one place.

RELEVANCE TO EUROPEAN PRACTICE

SCAD registries across Europe have grown substantially in recent years,

and awareness of the condition among cardiologists is rising accordingly. Yet, CR referral patterns for patients with SCAD remain inconsistent, partly reflecting the absence of SCAD-specific rehabilitation protocols in most national guidelines. These findings offer reassurance that structured CR is not only feasible in this population, but also associated with tangible gains in cardiorespiratory fitness and mental health, with no signal of harm to clinical events in the available data. For European CR services, this supports broadening referral criteria to include patients with SCAD as a distinct cohort, rather than defaulting to generic advice on activity restriction. It also strengthens the case for closer integration between cardiology and psychological support within CR programmes, given the magnitude of anxiety and depressive symptom improvement observed.

WHAT ARE THE NEXT STEPS FOR THE RESEARCH?

The evidence base remains constrained by the observational design and modest size of the included studies, and pooled clinical event data were underpowered to confidently rule out either benefit or harm. Larger, prospective, multicentre studies, ideally with standardised, SCAD-specific CR protocols and longer follow-up, are needed to clarify the impact of CR on recurrent SCAD, healthcare utilisation, and long-term quality of life. Given the established prognostic importance of cardiorespiratory fitness in cardiovascular disease more broadly, future work should also explore whether the functional gains seen here translate into measurable reductions in long-term cardiovascular risk. Until then, these findings support CR as a reasonable and likely beneficial component of SCAD recovery, extending the clinical conversation meaningfully beyond the angiogram.

References

1. Calderón Fernández A et al. Beyond angiography: cardiac rehabilitation after spontaneous coronary artery dissection — a systematic review and meta-analysis. Abstract. ESC Congress, 28-31 August, 2026.