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CORRESPONDENCE

Cardiorespiratory fitness changes in patients receiving comprehensive outpatient cardiac rehabilitation in the UK: a multicentre study

The Authors' reply We welcome the comments of Dr Ingle and Professor Carroll comparing our recent work[1] and their own important findings.[2] We agree with their suggestion that exercise test modality partially explains the relatively small gains in fitness reported for UK cardiac rehabilitation patients. The 1 metabolic equivalent (MET) gain reported by Carroll *et al*[2] appears clinically important and such findings should serve to illustrate to commissioners that important health-related gains in fitness can be achieved in outpatient cardiac rehabilitation. The 1 MET fitness gain is broadly comparable with that reported for one of our[1] centres which used treadmill testing (0.76 METs (95% CI 0.4 to 1.12)). We[3] have previously illustrated that exercise testing modality mediates fitness gains by reporting substantially larger effect sizes (ES) for fitness gains in patients assessed using the Naughton (ES=2.4, 95% CI 1.08 to 3.74) rather than the Bruce (ES=0.79, 95% CI 0.60 to 0.98) treadmill protocol.

Our treadmill data and those of Carroll *et al*[2] still suggest that fitness gains of UK cardiac rehabilitation patients remain below international values. We strongly believe this to be due to the relatively small dose of exercise routinely prescribed to UK patients.[4] To discern the degree to which exercise prescription influences fitness gains in cardiac rehabilitation independent of exercise test protocol we currently seek to recruit more centres and expand our current multicentre patient record study better-represent typical UK cardiac rehabilitation.

Such data will help us to discern the relative impact of exercise dose and exercise test protocol in fitness gains. We concur with Ingle and Carroll that test protocols may influence gains in cardiac rehabilitation but believe that there is a need for a controlled trial using gold-standard exercise assessment to directly compare fitness improvements in UK cardiac rehabilitation patients receiving usual care (n=8–12 exercise sessions)[4] with an exercise dose more typical (n=24–36 sessions) of that prescribed internationally.[3]

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