EDITORIAL

Is exercise as effective as drug therapy in reducing systolic BP?

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THE SYSTOLIC BLOOD PRESSURE (BP) LOWERING EFFECT OF EXERCISE AMONG HYPERTENSIVE populations appeared similar to that of commonly used antihypertensive medications in a network meta-analysis. However, none of the randomised controlled trials (RCTs) directly compared exercise with antihypertensive therapy.

The investigators used the Cochrane Library to identify meta-analyses of drug therapies aimed at lowering baseline systolic BP. A total of 194 RCTs, covering 29,281 patients on antihypertensive medications, were included in the analysis. They also looked at a previously published meta-analysis of exercise interventions to identify recent RCTs that tested the systolic BP lowering effects of endurance, dynamic resistance, isometric resistance, and combined endurance and resistance exercise interventions. A further 197 RCTs which evaluated exercise interventions, covering 10,461 participants, were also analysed.

'Among hypertensive populations, there were no significant differences in the systolic BP lowering effects of antihypertensive drugs when compared with exercise'

All medication trials included patients with hypertension (systolic BP ≥ 140 mmHg) but only 56 exercise trials included patients with systolic BP ≥ 140 mmHg (n = 3,508). When the cut-off used for hypertension was 130 mmHg the total of participants classed as hypertensive included in exercise trials rose to 6,046 and with a cut-off of 150 mmHg the respective figure was 1,828.

The primary outcome was a difference in mean change from baseline systolic BP between comparator treatments (change from baseline in one group minus that in the other group) and its 95% credible interval (95% CrI).

Compared with controls, all types of exercise and all classes of antihypertensive medications were effective in lowering baseline systolic BP.

Across all populations, antihypertensive medication and exercise interventions were effective in reducing baseline systolic BP when compared with controls by -8.80 mmHg (95% CrI: -9.58 to -8.02) and -4.84 (95% CrI: -5.55 to -4.13) respectively. Antihypertensive medication achieved higher reductions in baseline systolic BP compared with exercise interventions: mean difference −3.96 mmHg (95% CrI: −5.02 to −2.91).

However, among hypertensive populations, there were no significant differences in the systolic BP lowering effects of antihypertensive drugs (ACE inhibitors, angiotensin-2 receptor blockers, beta-blockers and diuretics) when compared with endurance or dynamic resistance exercise.

The authors point out that: 'While the number of participants included in exercise trials accounted for approximately one third of the total in medication trials, only a tenth of the overall hypertensive population (using a 140 mmHg cut-off) came from the exercise trials.'

'Different types of exercise interventions appeared to be as equally effective as most antihypertensive medications when we limited our analyses to trials in populations with high systolic BP. The effectiveness of exercise increased as we adopted higher systolic BP cut-offs to define hypertension,' they say.

It is worth noting some of the limitations of this study: electronic searches were conducted in Medline and may have missed relevant RCTs, trials included diverse populations, intervention definitions, comparators and outcome measures and potentially underestimated the magnitude of systolic BP lowering associated with exercise interventions. Furthermore, no RCTs directly compared exercise with antihypertensive medication.

'While our study suggests that exercise effectively lowers baseline systolic BP, the generalisability of these findings to real-world settings should be investigated further,' the authors state.

'Nevertheless, our findings can form the basis of evidence-based discussions between patients and their doctors about the systolic BP lowering benefits of exercise,' they add.

These findings offer further encouragement to the primary care team to continue to advise exercise interventions and positive lifestyle choices as a first-line intervention in the management of patients with hypertension.

REFERENCE
1 Naci H, Salcher-Konrad M, Dias S et al. How does exercise treatment compare with antihypertensive medications? A network meta-analysis of 391 randomised controlled trials assessing exercise and medication effects on systolic blood pressure. *Br J Sports Med* Published Online First: 18 December 2018. doi: 10.1136/bjsports-2018-099921