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| **Blood flow restricted exercise: prescription impact on peripheral blood flow** |
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| **Introduction/Aim:** Blood flow restricted exercise (BFRE) is a low-intensity strategy where, during exercise, peripheral blood flow is reduced via inflatable cuffs. Different cuff pressure prescriptions (standardised or individualised) may impact physiological and tolerability outcomes. This study aimed to determine 1) whether peripheral blood flow differed between cuff pressure prescription approaches; 2) associations between cuff pressure and self-reported tolerability.**Methods:** In this randomised cross-over experiment, participants with and without chronic conditions (≥50 years) were randomised to 5-minute cycling bouts where cuff pressure was standardised (A: no cuff pressure; B: 160 mmHg) or personalised (C: 50% limb occlusion pressure [gold-standard]; D: perceived cuff tightness [7/10]; E: systolic blood pressure [SBP]x1.3). Anterior tibial artery peripheral blood flow (Doppler ultrasound; cc/mins) and tolerability (leg discomfort, cuff tightness, breathlessness, numeric scales) were assessed at baseline and end exercise (cuffs inflated/deflated). Differences between conditions (repeated measures ANOVA) and associations between cuff pressure and tolerability ratings (linear mixed models) were assessed. **Results:** 25 individuals completed the protocol (without chronic condition n=15; chronic obstructive pulmonary disease n=5, diabetes n=2, hypertension=1, osteoarthritis n=1; 69±9 years; 68% female). Personalised conditions C, D and E mean cuff pressures were 65±10mmHg, 85±20mmHg and 165±10mmHg, respectively. Compared to baseline, peripheral blood flow was increased (p<0.05) at end exercise (cuffs inflated and deflated) in all cuff pressure prescription approaches, except approach E. Compared to condition C, condition E resulted in greater reduction in peripheral blood flow (p=0.02). Cuff restriction pressure was positively associated with perceived cuff tightness at end exercise but not significantly associated with leg discomfort or breathlessness. **Conclusion:**Absolute cuff pressure and peripheral blood flow vary depending upon prescription approach used. Identifying which cuff pressure prescription approach provides optimal reduction in peripheral blood flow during exercise, while being tolerable, remains to be determined.**Grant Support:** Australian Technology Network Latin-American (LATAM) ScholarshipUniversity of South Australia International Research Training Scholarship**Key Words:** Blood flow restricted exercise; Peripheral blood flow; Tolerability |