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STRUCTURED RESISTANCE EXERCISE AND REMOTE ISCHEMIC PRECONDITIONING FOR MODERATE INTERMITTENT CLAUDICATION

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Statement of the Problem: Walking is the recommended mode of exercise for moderate intermittent claudication (IC). There is currently limited information on the effect of remote ischemic preconditioning (RIPC) and structured resistance exercise (SE), specifically full-body exercise using resistance bands, for improving walking ability. The purpose of this study is to determine if an at home structured resistance exercise programme would elicit similar improvements in walking ability, body strength endurance and quality of life (QOL) in individuals with moderate IC compared to a combination intervention of RIPC and at home structured resistance exercise.

Methodology & Theoretical Orientation: As a pilot study participant were recruited from the vascular clinic over a 52-weeks and randomly allocated to one of two interventions: a 12-week RIPC and at home SE programme (RIPCS+SE) or a 12-week at home SE programme alone. Walking abilities and body strength endurance were assessed at baseline, 6-weeks and 12-weeks. QOL was assessed using EQ-5D-3L questionnaire. Findings: Thirty-one participants were recruited, 25 males and 6 females, whereby 15 were randomized to the 12-week RIPC+SE and 16 to the 12-week at home SE programme. Seven participants completed 6-weeks and 3 completed 12-weeks of the at home SE programme. Eight participants completed 6 weeks and 3 completed 12-weeks of the RIPC+SE programme. The median pain-free walking distance (PFWD) at baseline was 139.92m in the RIPC+SE group and 137.515m in the SE group. At 12 weeks the median PFWD was 316.625m and 294.5m in the RIPC+SE and the SE groups respectively. QOL scores were similar in both groups. **Conclusion & Significance:** Both interventions achieved significant improvements in PFWD. An at home SE programme, facilitates patient autonomy on timing and place of treatment, may be an effective intervention for patients with moderate IC. Further studies are required to determine the efficacy of this intervention.

Recent Publications

1. Delagarde, H., Ouadraougo, N., Grall, S., Macchi, L., Roy, P., Abraham, P., & Prunier, F. (2015). Remote ischaemic preconditioning in intermittent claudication. *Archives Of Cardiovascular Diseases*, 108(10), 472-479.

2. Fokkenrood, H., Lauret, G., Verhofstad, N., Bendermacher, B., Scheltinga, M., & Teijink, J. (2015). The Effect of Supervised Exercise Therapy on Physical Activity and Ambulatory Activities in Patients with Intermittent Claudication. *European Journal Of Vascular And Endovascular Surgery*, 49(2), 184-191.
3. Gerhard-Herman, M., Gornik, H., Barrett, C., Barshes, N., Corriere, M., & Drachman, D. et al. (2016). 2016 AHA/ACC Guideline on the Management of Patients With Lower Extremity Peripheral Artery Disease: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*, 135(12), e686-e725.
4. Hageman, D., Gommans, L., Scheltinga, M., & Teijink, J. (2016). Effect of diabetes mellitus on walking distance parameters after supervised exercise therapy for intermittent claudication: A systematic review. *Vascular Medicine*, 22(1), 21-27.
5. Sigvant, B., Lundin, F., & Wahlberg, E. (2016). The Risk of Disease Progression in Peripheral Arterial Disease is Higher than Expected: A Meta-Analysis of Mortality and Disease Progression in Peripheral Arterial Disease. *European Journal Of Vascular And Endovascular Surgery*, 51(3), 395-403.

Biography

Shannon Hernon is currently an exercise specialist and PhD researcher at the National University of Ireland Galway. Her expertise roots from an education in exercise and sport science and has expanded to personal training and exercise intervention for special populations. Shannon's at home full body resistance exercises programmes has allowed a new approach to management of intermittent claudication. She is currently working on a project comparing at home resistance exercise to supervised walking to determine if both programmes will elicit similar psychological and physiological benefits for moderate intermittent claudication

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