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A COMPARISON OF LOWER BODY AEROBIC EXERCISE (LE) WITH UPPER BODY ERGOMETRY (UBE) TRAINING ON WALKING CAPACITY IN PAD PATIENTS

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Objectives & Methods

The primary objective of this poster presentation will be to review the only 3 published studies we're aware of comparing the effects of lower body aerobic exercise trng (LBE) via cycle egometer or treadmill walking with upper body ergometry exercise trng (UBE) on pain-free walking distance (PFWD) and max tolerable waking distance (MWD) in PAD patients with claudication. In addition, attention is directed to a larger more-definitive trial currently ongoing at our institution, which in addition is attempting to identify possible mechanisms for favorable post-trng effects of both forms of exercise.

Results

Table 1 provides a brief description and results of the 3 previously published studies referred to above

Study (year, n)	Methods	UBE	LE
Walker (2000), n = 67	F = 2/week (6weeks) D = 40 minutes, W/R ratio 2:2 I = Near cardiac capacity P = At 3 weeks	PFWD ↑122% MWD ↑ 47%	PFWD ↑93% MWD ↑50%
Zwierska (2005), n = 94	F = 2/week (24weeks) D= 40 minutes, W/R ratio 2:2 I = 85-90% limb specific VO ₂ P P = Yes; at weeks 6, 12, 18	PFWD ↑51% MWD ↑29%	PFWD ↑57% MWD ↑31%
Treat-Jacobson (2009), n = 41	F = 3/week (12weeks) D = 60 minutes, variable I = 85% Peak HR, RPE 12-15 P = Yes (individualized)	PFWD ↑82% MWD ↑53%	PFWD ↑54% MWD ↑69%

LBE = lower body ergometry, F=frequency, D=duration, I=Intensity, P=Progression

Conclusion

Results of these studies support the hypothesis of the surprisingly equal effectiveness of UBE and LBE for improving walking capacity in PAD patients with claudication. Our currently in progress NHLBI-funded, randomized, controlled trial (PI=DTJ) further test this hypothesis and in addition is seeking to identify the mechanism of increased walking capacity. These include changes in cardiac output, VO₂ peak, endothelial function and other noninvasive assessments of vascular function, and inflammatory biomarkers.