Return to running following knee osteochondral repair using an anti-gravity treadmill

Authors, K. HAMBLEY1, S. POOMSALOOD1, E. MUNDY1 and D. STEPHENS1
1School of Sport and Exercise Sciences, University of Kent, Medway, United Kingdom

INTRODUCTION

Anti-gravity treadmills are being increasingly used after knee surgery to reduce ground reaction forces during walking and running.1,2 Antigravity treadmills have been shown to be safe and feasible to use in early rehabilitation following total knee replacement.3 However, there are no studies on the use of antigravity treadmills in a knee osteochondral population despite their increasing inclusion in rehabilitation guidelines.

AIM

The purpose of this study was to assess the impact of an anti-gravity treadmill return to running programme on self-efficacy and subjective knee function following knee osteochondral surgery.

METHOD

Two otherwise healthy female endurance runners who had undergone knee osteochondral surgery were recruited.

Patient A - 39 year old 9 months post-Bone Marrow Aspirate Concentrate (BMAC)5,6 for a left knee femoral cartilage grade 3-4 defect 3 cm2

Patient B - 54 year old 11 weeks post-surgery for a partial lateral meniscectomy and chondroplasty.

An anti-gravity treadmill (Figure 1) was used to manipulate loading during a graduated phased return to running (Table 1).

Self-efficacy was evaluated using the Self-Efficacy for Rehabilitation outcomes scale (SER)3 and the Knee Self-Efficacy Scale (K-SES).7 Subjective knee function was evaluated using the Knee injury and Osteoarthritis Outcome Score (KOOS).7

RESULTS

Self-efficacy increased 18% for both patients (Figure 2).

KOOS Sport/Rec subscale showed clinically important improvements (Figure 3).

CONCLUSIONS

The programmes resulted in improved knee and rehabilitation self-efficacy and subjective knee function following osteochondral repair of the knee.

These case reports illustrate the importance of considering self-efficacy in individualising rehabilitation after knee osteochondral surgery and highlights the potential role for anti-gravity treadmills in enhancing self-efficacy and subjective knee function in preparation for a return to sport.

REFERENCES


CONTACT INFORMATION

Dr Karen Hambly, School of Sport and Exercise Sciences, Medway Building, University of Kent, Chatham Maritime, Kent ME4 4AG, UK

k.hambly@kent.ac.uk @karenhambly