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THE EFFECTIVENESS OF A 6-WEEK EXERCISE INTERVENTION ON TYPE 1 DIABETES PATIENTS

<u>Krishan P Chauhan</u>ª

°De Montfort University, School of Pharmacy, UK

Background: Diabetes mellitus is a continuously growing epidemic, which affects all ages and ethnicities. In the UK, diabetes costs the NHS, £192 million per week (Diabetes UK, 2015). The complications developed by diabetes patients stem from the glycosylating effects of excessive circulating glucose. Exercise is known to act as a non-invasive method of treating diabetes by supporting the management of healthy blood glucose control and the development of skeletal muscle mass.

Aim: The study aimed to achieve improved measures of metabolic and physiological states in T1DM participants (n=16) aged between 18-24 years, after participating in the intervention. The measures consisted of the pre-and post-intervention recordings of HbA1c values, lipid profiles, basal metabolic rate (BMR), BMI and glycemic responses to oral glucose tolerance tests.

Method: This study focused on the effects of performing a combination of both aerobic (AE), and resistance (RE) exercises at 50-60 % intensity across a 6-week exercise intervention on sedentary T1DM participants. The 6-week programme consisted of undertaking two sessions per week of RE at a 50-60 % (1-repition max) intensity, completed through 10-repitions over three sets. The resistance exercises were preceded by 20-minutes of ergonomic stationary cycling at maintained 50-60 % intensity predetermined target heart rate. The overall effect of performing an AE and RE programme contributes to an array of beneficial traits. Improvements in HbA1c and lipid profiles were seen throughout the cohorts. The decrease in the BMR and the reduced difference between the experimental and theoretical BMR values support the metabolism of non-protein substrates such as glucose and fatty acids, which prevents the loss of muscle mass.

Biography

Krishan Chauhan is completing his PhD, currently 25 years of age at De Montfort University, School of Pharmacy. This poster would be his first publication in diabetes and physiology.

kchauhan@me.com

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