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Autor(es): Baptista, Liliana Carina Pereira; Martins, Raúl A.

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MULTIFACTORIAL CARDIOVASCULAR RISK INTERVENTION IN AN EARLY STAGE OF TYPE 2 DIABETES IN OLDER ADULTS: THE EFFECT OF EXERCISE TRAINING AND METFORMIN

Liliana Carina Pereira Baptista¹; Raúl A. Martins¹

INTRODUCTION

The management of diabetes in elderly is a complex process due to the increased prevalence of comorbidities, heterogeneous functional status, and geriatric syndromes⁽¹⁾, and although glucose regulation plays a central role on the standards of medical care, greater reductions on other cardiovascular risk factors, especially hypertension and lipid profile, may be the key factor to decrease morbidity and mortality⁽²⁾. Nevertheless, the relative clinical value of exercise training and/or drug treatment remains unclear⁽³⁾. Therefore, the aim of the present study is to analyze the effect of 3 types of treatment – multicomponent exercise(E); oral hypoglycemic drug - metformin(M); combined therapy- exercise plus metformin (MEX) – on cardiovascular risk in older adults with type 2 diabetes (T2D), and with comorbidity in an early stage of the disease (HbA1c < 7.5 %).

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METHODS

This 2-year un-randomized longitudinal cohort study included 284 T2D older adults (> 60 years) that underwent one of 3 conditions: E ($n = 59$), trained three sessions per week; M ($n = 30$), used metformin 850 mg twice daily; MEX ($n = 195$), combined exercise plus metformin. Baseline and follow-up multifactorial cardiovascular risk assessment included anthropometric, hemodynamic components, lipid profile, glycaemia and cardiorespiratory fitness (CRF).

¹ Universidade de Coimbra- Faculdade de Ciências do Desporto e Educação Física.

Email: libaptista10@hotmail.com

RESULTS

After the 24-months of intervention, comparing E with M therapy, large effect sizes were observed in body mass (BM), waist circumference (WC), waist-to hip ratio (WHR), systolic (SBP), diastolic blood pressure (DBP) and cardiorespiratory fitness (CRF); body mass index (BMI) and glycaemia had moderate effect size. Moreover, comparing MEX with M therapy, large effect sizes were found in BM, WC, WHR and CRF, and moderate effect sizes in BMI, SBP and DBP. E group decreased BM (3.6 %), WC (4.2%), BMI (2.7%), SBP (11.1%), DBP (11.3%), TG (21.2%), glycaemia (12.3%), and increased CRF (17.7%). M group increased WC (2.2%), WHR (3.1%), BMI (1.6%), and SBP (5.4%). MEX group reduced BM (1.1%), WC (2.4%), BMI (1.4%), and DBP (8.2%), while increased SBP (0.7%), glycaemia (6.7%), and CRF (18.0%).

CONCLUSIONS

Exercise training was the most effective therapy decreasing cardiovascular risk in early stage of T2D in older adults with multimorbidity, attenuating also some adverse effects of the M therapy.

REFERENCES

1. Bell, S.P. & Saraf, A.A., (2016). "Epidemiology of Multimorbidity in Older Adults with Cardiovascular Disease" *Clinics in Geriatric Medicine*, Vol. 32(2), pp. 215–226.
2. American Diabetes Association, 2016. Standards of Medical Care in Diabetes - 2016. *Diabetes Care*, 39⁽¹⁾, pp. S1–S112.
3. Thompson, D. et al., (2014) "Effect of Diet or Diet Plus Physical Activity Versus Usual Care on Inflammatory Markers in Patients with Newly Diagnosed Type 2 Diabetes: The Early ACTivity In Diabetes (ACTID) Randomized, Controlled Trial" *Journal of the American Heart Association*, 3⁽³⁾.