

3rd International Conference and Expo on

Natural, Traditional & Alternative Medicine

September 24-25, 2018 | Montreal, Canada

Aerobic training and Purslane seed extract consumption improve knee movement and sex hormones in post-menopausal women with type 2 diabetes

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The primary aim of this study was to assess the effect of Purslane seed consumption and aerobic training on knee joint movement and strength in postmenopausal women with type 2 diabetes. The secondary aim was to assess differences in sex-steroid hormones. Ninety-two post-menopausal women with type 2 diabetes were randomized into aerobic training (AT), aerobic training + Purslane seed consumption (AT+Ps), and control (C), group. Patients of AT and AT+Ps groups trained 3 days per week for 16 weeks. The group of AT+Ps consumed 2.5 g of purslane seeds extract with lunch and 5g with dinner daily for 16 weeks. They underwent progressive aerobic training for a minimum of 60 min per session with intensity at 50-70% of maximum heart rate. knee joint laxity was measured by using a custom-made electronic chair at 24 hours before (pre-test), and after 16 weeks of training (post-test). Blood samples also were collected to assess serum oestrogen, progesterone, testosterone, and relaxin hormones. AT+Ps group at post-test stage have smallest knee angle as compared to C or AT group. Serum oestrogen concentration in the AT+Ps was significantly increased after 16 weeks as compared to pre-test levels, AT or C, whereas the level of progesterone was not significantly increased. Furthermore, testosterone and relaxin levels were not changed after 16 weeks of aerobic training and Purslane seed consumption. Purslane seed consumption alongside aerobic training may protect knee strain injury in post-menopausal women with T2D through increasing knee joint stiffness and modulate sex steroid hormones.

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