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Low Volume High Intensity Interval Training Effect on Liver Enzymes in Chronic Hepatitis C Patients

Authors : Aya Gamal Khattab

Abstract : Chronic infection with the hepatitis C virus (HCV) is now the leading cause of liver-related morbidity and mortality; Currently, alanine aminotransferase ALT measurement is not only widely used in detecting the incidence, development, and prognosis of liver disease with obvious clinical symptoms, but also provides reference on screening the overall health status during health check-ups. Exercise is a low-cost, reliable and sustainable therapy for many chronic diseases. Low-volume high intensity interval training HIT is time efficient while also having wider application to different populations including people at risk for chronic inflammatory diseases. Purpose of this study was to investigate the effect of low volume high intensity interval training on ALT, AST in HCV patients. All practical work was done in outpatient physiotherapy clinic of Suez Canal Authority Hospitals. Forty patients both gender (27 male, 13 female), age ranged (40-60) years old submitted to low volume high intensity interval training on treadmill for two months three sessions per week. Each session consisting of five min warming up, two bouts for 10 min each bout consisting of 30 sec - 1 min of high intensity (75%-85%) HRmax then two to four min active recovery at intensity (40%-60%) HRmax, so the sum of high intensity intervals was one to two min for each session and four to eight min active recovery, and ends with five min cooling down. ALT and AST were measured before starting exercise session and 2 months later after finishing the total exercise sessions through blood samples. Results showed significant decrease in ALT, AST with improvement percentage (18.85%), (23.87%) in the study, so the study concluded that low volume high intensity interval training had a significant effect in lowering the level of circulating liver enzymes (ALT, AST) which means protection of hepatic cells and restoration of its function.

Keywords : alanine aminotransferase (ALT), aspartate aminotransferase (AST), hepatitis C (HCV), low volume high intensity interval training
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