SUN-250 Testosterone Correlates With Cardiorespiratory Fitness In Men With Coronary Heart Disease But Does Not Predict Rehabilitation Outcomes [abstract only]

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survival is uncertain, particularly in men, who face higher cardiovascular mortality rates linked to low testosterone levels. We investigate whether testosterone levels may enhance cardiovascular function and exercise capacity, highlighting its potential role in optimizing rehabilitation outcomes for CHD patients. **Methods:** Samples from an eight-week exercise-based cardiac rehabilitation programme in patients with coronary heart disease (CARE-CR study) were assessed for serum total testosterone (TT) and SHBG via LCMS. Bioavailable (BioT) and free testosterone (FT) was calculated by using the Vermeulen equation. Patients undertaking exercise intervention (n=40) or abstention (control group, n=20) were assessed for the primary outcome estimated peak oxygen uptake ($\dot{V}O_{2peak}$) by cardiopulmonary exercise testing (CPET) and regression analysis was used to investigate correlations with testosterone at baseline, 10 weeks and 12-month follow-up. **Results:** Mean cohort $\dot{V}O_{2peak}$ was 23.3 $ml/kg^{-1}/min^{-1}$ at baseline, and there were no changes in $\dot{V}O_{2peak}$ within the groups at any time point. Testosterone was not altered in either group across all time points. Linear regression analysis demonstrated that calculated FT and BioT were significantly ($p < 0.05$) correlated with $\dot{V}O_{2peak}$ at baseline, 10 weeks and 12 months in combined group analysis, indicating a consistent association between higher bioavailable testosterone levels and greater cardiorespiratory fitness, although the coefficient of determination (R^2) was < 0.3 for all analyses. Participation in the exercise-based rehabilitation program did not significantly influence testosterone levels over time, nor did testosterone predict improvements in $\dot{V}O_{2peak}$ following routine cardiac rehabilitation. **Discussion:** These findings suggest that while endogenous testosterone availability is associated with aerobic capacity in CHD patients, exercise rehabilitation response may not be influenced by testosterone levels. Further research is required to assess whether testosterone therapy could enhance rehabilitation effectiveness and improve cardiovascular outcomes in CHD patients.

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Testosterone Correlates With Cardiorespiratory Fitness In Men With Coronary Heart Disease But Does Not Predict Rehabilitation Outcomes

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Introduction: Coronary heart disease (CHD) remains a leading cause of mortality, with cardiovascular rehabilitation, including exercise training, playing a key role in long-term management. However, its effectiveness in improving