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A 20-MONTH PROSPECTIVE STUDY OF PHYSICAL ACTIVITY AND THE CHOLESTEROL PROFILE OF 224 WOMEN

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Purpose:

The aim of this epidemiological study was to utilize an objective measurement of total PA to determine the association between PA and changes in PA and changes in the cholesterol profile (TC, LDL, HDL, LDL/HDL).

Methods:

224 subjects participated in this 20-month study. For 7 consecutive days at baseline and at follow-up, subjects wore CSA accelerometers. During the same 7-day periods, subjects weighed and recorded all dietary intake. Body fat was assessed using the Bod Pod and abdominal fat was measured using waist circumferences. The cholesterol profile was measured at a certified lab. To determine the extent PA contributed to changes in the cholesterol profile, regression analysis using the general linear model procedure (GLM) was employed.

Results:

From baseline to follow-up, subjects increased weight by 0.7 ± 3.9 kg ($p < 0.05$), increased body fat $0.8 \pm 3.9\%$ ($p < 0.05$), increased waist circumference 1.2 ± 6.4 cm ($p < 0.05$), increased dietary fat (NS), and decreased physical activity 4.8% ($p < 0.05$). Total cholesterol increased 6.7 ± 22.8 mg/dL ($p < 0.05$), LDL increased 4.9 ± 18.6 mg/dL ($p < 0.05$), HDL increased 0.8 ± 8.4 mg/dL (NS), and the LDL/HDL ratio increased 0.1 ± 0.4 ($p < 0.05$) over the 20-month period. Baseline PA was not a statistically significant predictor of changes in the cholesterol profile. Likewise, PA at follow-up did not significantly contribute to changes in the cholesterol profile. In addition, changes in PA across the duration of the study did not significantly contribute to changes in the cholesterol profile. Statistical control of age, body fat, abdominal fat, and dietary fat, considered separately and in combination, did not affect any of the relationships between PA and the cholesterol profile.

Conclusion:

Although total PA, as measured by accelerometry, decreased significantly from baseline to follow-up, it was not associated with changes in the cholesterol profile in middle-aged women across 20 months. It is possible that intense PA rather than total PA is a better predictor of changes in the cholesterol profile.