

Effect of transdermal testosterone treatment on serum lipid and apolipoprotein levels in men more than 65 years of age.

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Source

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Abstract

PURPOSE:

Because the effects of androgen replacement on lipoprotein levels are uncertain, we sought to determine the effect of transdermal testosterone treatment on serum lipid and apolipoprotein levels in elderly men.

SUBJECTS AND METHODS:

One hundred and eight healthy men more than 65 years of age who had serum testosterone concentrations >1 SD below the mean for young men were randomly assigned to receive either testosterone (54 men; 6 mg/day) or placebo (54 men) transdermally in a double-blind fashion for 36 months. Serum concentrations of lipids and apolipoproteins were measured, and cardiovascular events recorded.

RESULTS:

Serum total cholesterol concentrations decreased in both the testosterone-treated men and placebo-treated men, but the 3-year mean ($\pm$ SD) decreases in the two groups (testosterone treated, -17 ± 29 mg/dL; placebo treated, -12 ± 38 mg/dL) were not significantly different from each other ($P = 0.4$). Similarly, serum low-density lipoprotein (LDL) cholesterol levels decreased in both treatment groups, but the decreases in the two groups (testosterone treated, -16 ± 24 mg/dL; placebo treated, -16 ± 33 mg/dL) were similar ($P = 1.0$). Levels of high-density lipoprotein (HDL) cholesterol, triglycerides, and apolipoproteins A-I and B did not change. Lipoprotein(a) levels increased in both groups by similar amounts (testosterone treated, 3 ± 9 mg/dL; placebo treated, 4 ± 6 mg/dL; $P = 1.0$). The number of cardiovascular events was small and did not differ significantly between the testosterone-treated men (9 events) and the placebo-treated men (5 events) during the 3-year study (relative risk = 1.8; 95% confidence interval: 0.7 to 5.0).

CONCLUSIONS:

As compared with placebo, transdermal testosterone treatment of healthy elderly men for 3 years did not affect any of the lipid or apolipoprotein parameters that we measured. The effect of testosterone treatment on cardiovascular events was unclear, because the number of events was small.

PMID:

11566454

[PubMed - indexed for MEDLINE]