

Is Testosterone (T) treatment safe and effective in men with HIV infection? A meta-analysis

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BACKGROUND: Prevalence of hypogonadism is high (30%) in men with HIV. In these patients T treatment (TT) is currently used mainly to counteract wasting syndrome and/or HIV-related lipodystrophy, irrespective of patients' serum T. However, its effect and safety in HIV-infected men is still not completely known

AIM: To investigate both beneficial and adverse effects (minor adverse events and major adverse cardiovascular events -MACE) related to TT in HIV-infected men using a meta-analytic approach.

METHODS: An extensive MEDLINE search was performed using 'PubMed' with the following key-words: 'HIV' and: 'hypogonadism', 'testosterone treatment', 'T', 'androgens' or 'sex steroids' from 1946 to April 2015. Meta-analysis included only 19 placebo-controlled-clinical trials evaluating TT in HIV patients and was conducted according to PRISMA statement.

RESULTS: All 19 trials evaluated the effect of TT on body weight. A total of 952 HIV-infected men were evaluated, 557 treated with T and 395 with placebo. TT significantly improved total lean body mass (standardized mean 1.44 [0.82-2.07], $p < 0.001$) (Figure 1), total body weight (0.99 [0.25-1.72], $p = 0.008$) and fat free mass (1.48 [0.85-2.12], $p < 0.001$). This improvement is characterized by higher heterogeneity ($I^2 = 84%$, 88% and 60%, respectively). Conversely, no beneficial effects were seen on total fat mass (-0.17 [-1.58-1.25], $p = 0.820$). TT was associated with an increased incidence of minor adverse events (OR=1.50[1.11-2.01], $p = 0.008$) and increased mean serum PSA (0.10 ng/mL, CI:0.03-0.17, $p = 0.007$). No change in hemoglobin (0.39, CI:-0.29-1.07, $p = 0.260$) was seen. No data about MACE were available.

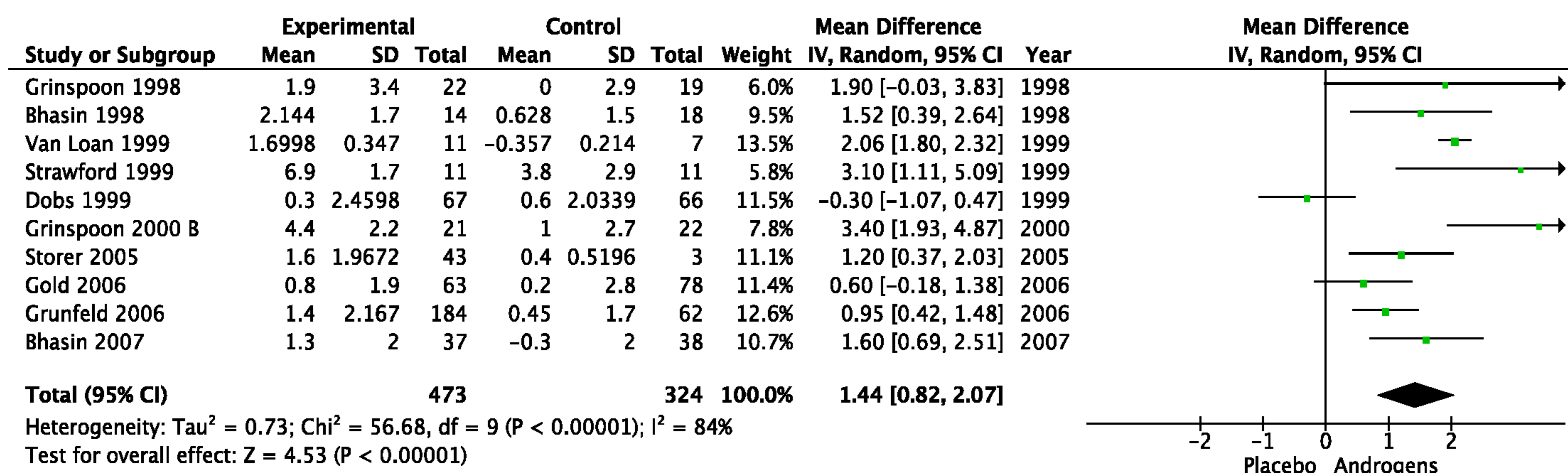


Figure 1. Forest plot representing the T effect on lean body mass

CONCLUSIONS Our study suggests that TT in HIV-infected men is effective in improving body composition (increase in lean body mass), although the incidence of general adverse events is higher than in the placebo group. However, studies show a highest variability and the real benefits of TT in HIV-infected men remains still to be established.