B3-05 Testosterone treatment improves insulin resistance in metabolic syndrome

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The metabolic syndrome involves a cluster of clinical features including visceral obesity, insu. resistance, hypertension, glucose intolerance, and dyslipidemia. Recent studies have shown that lc. testosterone levels are significantly associated with metabolic syndrome and type 2 diabetes.

We examined the change in insulin resistance after testosterone treatment in five Japanese men wi metabolic syndrome and low free testosterone levels (age : 50.2±8.7 yrs, BMI : 30.5±5.0, waist : 97± 7 cm ; Mean±SD). Testosterone supplements were administered by intramuscular injection (250 m every 2 weeks) for 3 to 6 months.

Fasting plasma glucose (FPG), fasting serum insulin (F-IRI), HbA1c, total cholesterol(TCHC triglyceride(TG), HDL-C, LDL-C, free testosterone, LH, FSH, BMI and waist circumference were measure We used homeostasis model assessment (HOMA-R) as an index of insulin resistance and investigate the change in insulin resistance after testosterone treatment.

Average results before treatment were as follows: BMI 30.5±5.0, waist 97±7cm, FPG 112±6mg/c F-IRI 25.1±8.5μIU/ml, HOMA-R 7.0±2.7, HbA1c(NGSP) 5.8±0.3 % , TCHO 227±31mg/dl, TG 185± 64mg/dl, HDL-C 43±9mg/dl, LDL-C 149±37mg/dl, free testosterone 5.9±1.0pg/ml, LH 1.7±0.6IU ml, FSH 3.7±0.7IU/ml. After treatment, F-IRI, HOMA-R, TCHO and LDL-C were significantly decrease to 12.9±3.6μIU/ml, 3.3±1.1 199±29mg/dl and 120±31mg/dl, respectively. Free testosterone wa significantly increased to 8.5±0.6pg/ml. Other parameters were not changed significantly.

In conclusion, these results suggest that testosterone treatment improves insulin resistance in Japanese men with metabolic syndrome and low free testosterone levels.

B3-06 The influence of androgens on anthropometric parameters

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Objective: It is known that sex steroids affect fat distribution with men and women. With men there is a tendency to deposit fat abdominally. Men are more likely to have more visceral fat than premenopausa. women, with whom the preferential fat distribution is gluteofemoral and the percentage of body fat overall higher. Androgens may affect fat tissue with men either directly by androgen receptor stimulation, or indirectly by oestrogen receptor stimulation after aromatization. Interesting relationships between the parameters of metabolic syndrome and non-aromatizable metabolites of testosterone have been discussed in literature. Some papers describe these metabolites as one of the possible causes of male-type obesity.

Aim of the study: The analysis of the relation between anthropometric parameters, lipid spectrum, glycemia, insulin resistance and the level of testosterone and dihydrotestosterone

Methods: We examined a set of 195 men and determined their testosterone, dihydrotestosterone, SHGB, lipid spectrum, glucose metabolism parameters and the oral glucose tolerance test; also measured were their anthropometric parameters (weight, height, waist, hips, waist to hip ratio, 14 skin folds) and body composition was calculated.

Results: Comparing the hormone levels and anthropometric parameters, we found a negative correlation between weight, skin folds, waist, hips, waist to hip ratio, BMI, total cholesterol, LDL cholesterol and insulin resistance on one side and the level of both testosterone (T) and dihydrotestosterone (DHT5α) and SHBG on the other side. We found a positive correlation between HDL cholesterol and muscle mass on one side and the T, DHT levels and SHBG on the other side.

Conclusions: We found a negative relation between anthropometric parameters and both testosterone and dihydrotestosterone. We did not find any difference between aromatizable and non-aromatizable steroids with healthy, normosthenic men.

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