

P70. Insulin sensitivity and testicular function in a cohort of adult males suspected of being insulin-resistant

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Context: A cohort of 141 males (18-80 yo, 42.9±12.9) strongly suspected of being Insulin Resistant (IR) was prospectively studied by determining their insulin sensitivity (Pancreatic Suppression Test, PST) and testicular function (total testosterone and SHBG).

Methods: The subjects were labeled as IR when the Steady State Plasma Glucose (SSPG) was ≥ 150 mg/dL and Non-Insulin Resistant (NIR) when SSPG was < 150 mg/dL; similarly, the subjects were labeled as Hypogonadal (HYPOG) when total testosterone was ≤ 3.0 ng/mL and Eugonadal (EUG) when total testosterone was > 3.0 ng/mL.

Patients: 141 males (18-80 yo, 42.9±12.9).

Results: Contingency analysis indicated a significant interdependence between insulin resistance and hypogonadism (chi-square was 4.69, $p=0.0303$). Age (>43 yo) predicted hypogonadism (AUROC 0.606, $p=0.0308$). Twice as many HYPOG subjects were IR as compared with EUG subjects. Also, HYPOG subjects exhibited higher SSPG values as compared with EUG subjects. Neither Weight nor BMI predicted hypogonadism, while Waist Circumference (>110 cm) was a mediocre predictor (AUROC 0.640, $p=0.009$). SSPG (>224 mg/dL) on the other hand, was an acceptable predictor of hypogonadism (AUROC 0.709, $p=0.002$). Age did not predict insulin resistance, while Weight (>99 kg), BMI (>29), and specially, Waist Circumference (>99 cm, AUROC 0.812, $p< 0.0001$) were all predictors of insulin resistance. Most subjects with normal weight in this cohort were IR (53.3%) while 13.6% of the obese subjects were NIR.

Conclusion: Waist Circumference predicted both insulin resistance (>99 cm) and hypogonadism (>110 cm), suggesting that the first hit of abdominal obesity is insulin resistance and the second hit is male hypogonadism. Normal weight did not protect from IR and a relevant proportion of obese subjects were NIR.

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