



SEMEN, ULTRASOUND AND PSYCHOBIOLOGICAL PARAMETERS CORRELATE WITH METABOLIC SYNDROME IN MEN WITH COUPLE INFERTILITY



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ANDROLOGY

Introduction: Metabolic syndrome (MetS) is a diagnostic category which identifies subjects at high risk for diabetes and cardiovascular diseases, erectile dysfunction (ED) and male hypogonadism. However, MetS impact on male infertility has been poorly studied.

Aim: To systematically evaluate possible associations between MetS and clinical characteristics in men with couple infertility.

Methods:

- Out of 367 consecutive subjects, 351 men without genetic abnormalities were studied.
- MetS was defined according to the IDF&NHLBI classification
- IDF&NHLBI: International Diabetes Federation & American Heart Association/National Heart, Lung, and Blood Institute
- All men underwent physical, hormonal, seminal and scrotal ultrasound evaluation.
- Erectile function was assessed by International Index of Erectile Function-15 erectile function domain (IIEF-15-EFD).
- Ejaculatory function was assessed by Premature Ejaculation Diagnostic Tool (PEDT).
- Psychological symptoms were assessed by Middlesex Hospital Questionnaire (MHQ).

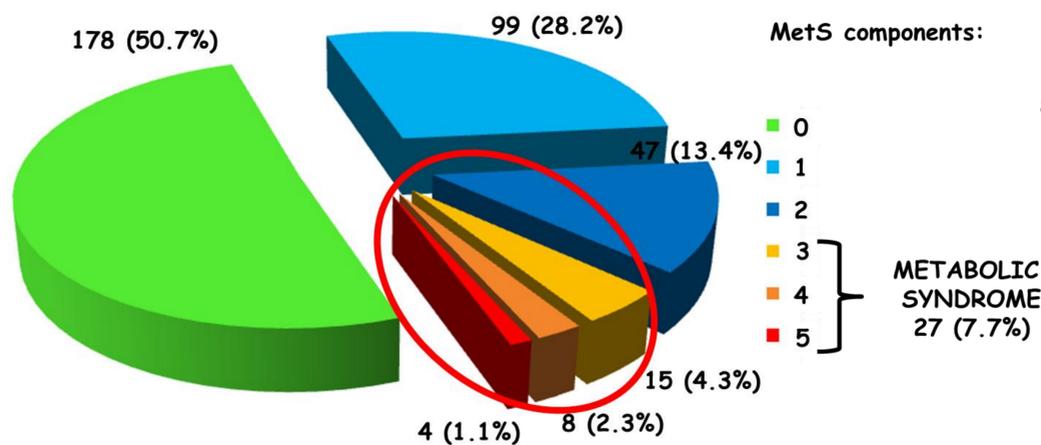
Seminal, ultrasound and psychobiological parameters correlate with metabolic syndrome in male members of infertile couples

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IDF&AHA/NHLBI
3 or more of the following

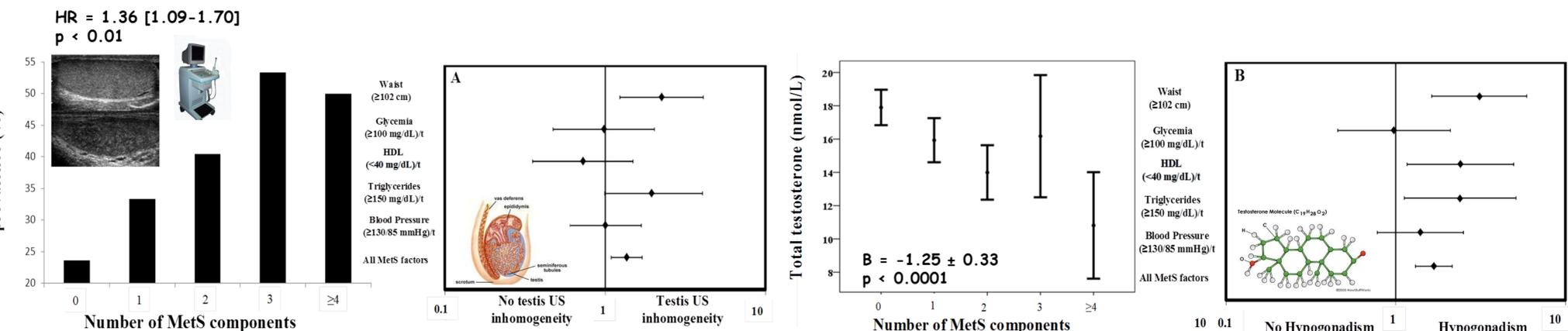
- Central obesity (population- and country-specific definitions)
- Hypertriglyceridaemia: triglycerides ≥ 150 mg/dl (1.7 mmol/L) or treatment
- Low HDL-cholesterol: < 40 mg/dl (1.03 mmol/L) or treatment
- Hypertension: blood pressure $\geq 130/85$ mmHg or treatment
- Fasting plasma glucose: ≥ 100 mg/dl (5.6 mmol/L) or treatment



Distribution of subjects (n=351) (mean age 36.0 ± 8.0 years) according to the number of MetS components

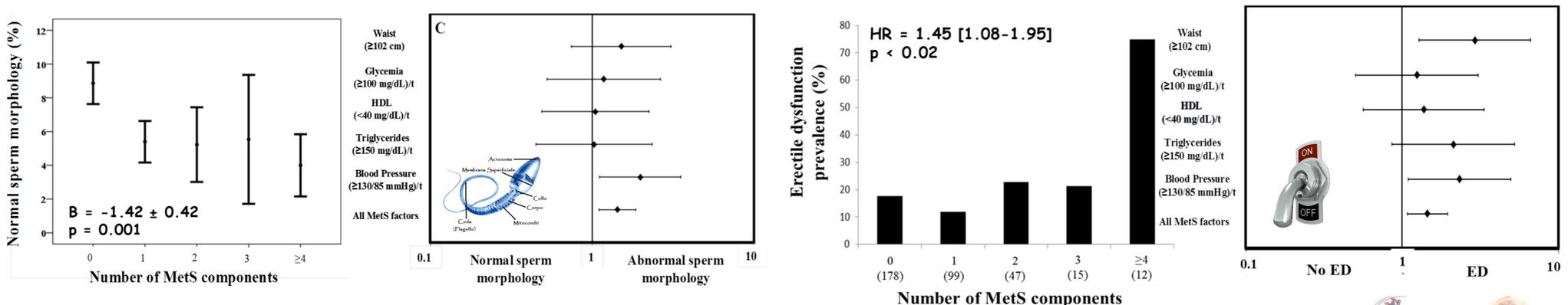
Results: Out of 351 patients, 27 (7.7%) fulfilled MetS criteria.

- A. Among ultrasound features, in an age-adjusted logistic model, only testis inhomogeneity was significantly associated with increasing MetS factors.
- B. In an age-adjusted model, MetS was associated with a stepwise decline in total testosterone (TT), without a concomitant rise in gonadotropins.



C. At univariate analysis, progressive motility and normal morphology were negatively related to the number of MetS components (both $p < 0.0001$), but when age and TT were introduced in a multivariate model, only sperm morphology retained a significant association..

D. The risk of ED (IIEF-15-EFD score < 26) increased as a function of the number of MetS factors, even after adjusting for age and TT. No association between PEDT score and MetS was observed.



E. Finally, after adjusting for age and TT, somatization and depressive symptoms were associated with increasing MetS components ($B = 0.66 \pm 0.03, p < 0.05$; $B = 0.69 \pm 0.03, p < 0.02$; respectively).

Conclusions: In men with couple infertility, MetS is associated with hypogonadism, poor sperm morphology, testis ultrasound inhomogeneity, ED, somatization and depression. Recognizing MetS could help patients to improve not only fertility but also sexual and overall health.

