Associations between visceral adipose tissue, inflammation and sex steroid concentrations in men

Submitted by Emmanuel Lemoine on Wed, 12/11/2013 - 17:08

Titre

Associations between visceral adipose tissue, inflammation and sex steroid concentrations in men

Type de publication

Article de revue

Auteur

Gautier, Alain [1], Bonnet, Fabrice [2], Dubois, Séverine [3], Massart, Catherine [4], Grosheny, Catherine [5], Bachelot, Anne [6], Aubé, Christophe [7], Balkau, Beverley [8], Ducluzeau-Fieloux, Pierre-Henri [9]

Editeur

Wiley

Type

Article scientifique dans une revue à comité de lecture

Année

2012

Langue

Anglais

Date

2012

Numéro

3

Pagination

373 - 378

Volume

78

Titre de la revue

Clinical endocrinology

ISSN

1365-2265

Mots-clés

Adult [10], Aged [11], Estradiol [12], Humans [13], Inflammation [14], Interleukin-6 [15], Intra-Abdominal Fat [16], Male [17], Middle Aged [18], Steroids [19], Testosterone [20]
CONTEXT: In men, obesity and the metabolic syndrome are accompanied by decreased testosterone levels, but little is known about the associations between visceral adipose tissue (VAT), VAT-related inflammation and sex steroids. OBJECTIVE: To examine the relative impact of VAT, abdominal subcutaneous adipose tissue (SAT) and interleukin 6 (IL-6), a marker of VAT-induced inflammation, on testosterone (T) and 17β-oestradiol (E2) levels in dysmetabolic men. METHODS: We study the NUMEVOX cohort of 229 men, aged 27-77 years, who all had at least one metabolic syndrome criterion (on average three). IL-6, C-reactive protein, Homeostasis Model Assessment of (HOMA) insulin resistance index (HOMA-IR), liver enzymes, E2, LH, sex hormone-binding globulin (SHBG), T, waist circumference and body mass index (BMI) were measured; bioavailable testosterone (BT) was calculated from T and SHBG; MRI-assessed VAT and SAT were analysed in 109 of these men. RESULTS: Visceral adipose tissue was strongly correlated with E2 (Spearman r = 0.38, P < 0.001) and with BT/E2 ratio (r = -0.42, P < 0.001), while SAT was not correlated with either. IL-6 was correlated with E2 (r = 0.19, P = 0.007), BT (r = -0.19, P = 0.066) and BT/E2 ratio (r = -0.30 P < 0.001). In multivariate linear analysis, the relation between VAT and E2 was independent of age, BMI (P = 0.008), leptin (P < 0.001), T and SHBG. Log(IL-6) was significantly inversely related with log(BT) (P = 0.032) independently of age, VAT, leptin and HOMA-IR. CONCLUSIONS: 17β-oestradiol levels were positively associated with VAT, but not with SAT, while T and BT were negatively and independently associated with IL-6. The significant inverse association between IL-6 and T suggests an important role of low-grade visceral fat inflammation in the central hypogonadism associated with the metabolic syndrome.

URL de la notice http://okina.univ-angers.fr/publications/ua281 [21]
DOI 10.1111/j.1365-2265.2012.04401.x [22]
Lien vers le document dx.doi.org/10.1111/j.1365-2265.2012.04401.x

Liens
[22] http://dx.doi.org/10.1111/j.1365-2265.2012.04401.x

Publié sur Okina (http://okina.univ-angers.fr)