Investigating CD14 and CD16 in diabetics with nonalcoholic fatty liver disease associated with gonadal dysfunction

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Background:

Non-alcoholic fatty liver disease (NAFLD) is one of the components of metabolic syndrome associated with type 2 diabetes mellitus, dyslipidemia and central obesity 20 which led to acquired hypogonadism and create a state of meta inflammation.

Aim of the work:

To evaluate, NAFLD in diabetic male patients and its relation to hypogonadotropic hypogonadism, in addition to studying the possible role of total monocytes fraction and their proinflammatory subset in NAFLD and their relation to hypogonadotropic hypogonadism.

Patients and methods:

This study includes 150 participant classified according to ADAM score into three groups: group I include 50 hypogonadal diabetic men, group II include 50 eugonadal men and group III include 50 healthy men, all of them underwent full history taking, thorough clinical examination, anthropometric measurement and laboratory investigation including lipid profile and calculated NAFLD fibrosis score (NFS), testosterone level (TT), calculated free testosterone (CFT), sex hormone binding globulin (SHBG), Follicle-stimulating hormone (FSH), Luteinizing hormone (LH). Calculated Homeostasis model assessment index (HOMA IR) and measurement of Monocyte CD14 and CD 16.

Results:

Hypogonadal group had elevated anthropometric parameters, higher fasting insulin level and HOMA IR with increased triglycerides levels, LDL-C and total cholesterol and decreased HDL-C than eugonadal patients with higher NFS and increase in total monocytes and CD16+ monocytes. Serum TT has strong negative correlations with HOMA IR and triglycerides levels in addition to total monocytes and CD16+ monocytes percentages ($p < 0.001$, $r - 0.454$, $r - 0.792$) respectively.
Moreover, positive correlations were detected between NFS, total monocytes % and CD16+ monocytes % ($p < 0.001$, r 0.868, 0.511).

Conclusion:

Meta inflammation is a predictor of hypogonadism in diabetic males, and both are linked to the development and progression of NAFLD.