

The Importance of Visceral Adipose Tissue Detected by Imaging Methods to Assess Nonalcoholic Fatty Liver Disease Properly

Dear Editor,

We read the article entitled “The Effect of Symbiotic Supplementation on Liver Enzymes, C-reactive protein (CRP), and ultrasound findings in patients with nonalcoholic fatty liver disease (NAFLD): A Clinical Trial” with great interest.^[1] In this study, authors reported that symbiotic supplementation improved the grade of hepatosteatosis in NAFLD patients without any change in alanine aminotransferase, aspartate aminotransferase, and CRP levels. With this aspect, the current study offers a new perspective on the management of NAFLD. However, there is a lack of information about the association between amount of visceral adipose tissue (VAT) which is an important factor for fat accumulation in liver, presence of diabetes, metabolic syndrome (MetS), hyperlipidemia, and NAFLD. Therefore, we would like to make some important contributions in this regard.

It is believed that insulin resistance (IR) and impaired thyroid hormone action, which may cause decreased mitochondrial oxidative capacity and make changes in gene expression regarding RNA, protein, and energy metabolism, play a key role in fat accumulation in the liver.^[2,3] In our previous study associated with this issue, (a) fibrinogen and CRP levels were found to be significantly higher in patients with the homeostasis model assessment-IR (HOMA-IR) ≥ 4 and Grade 3 hepatosteatosis, which was described as severe pathology group, (b) there was a weak positive correlation between grade of hepatosteatosis and insulin level and a moderate positive correlation between grade of hepatosteatosis and IR, (c) adiponectin levels were higher in patients in mild pathology group (HOMA-IR ≥ 2.5 and Grade 0 hepatosteatosis or HOMA-IR < 2.5 and Grade 1–2 hepatosteatosis) compared to the other severe two groups, and (d) VAT calculated with a single axial tomographic profile taken from the umbilical level, HBA1c, glucose, HOMA-IR, and insulin levels was increased in parallel with the increase in pathological stages.^[4] In parallel with our study, some researchers reported that VAT has a higher lipolytic activity, which increases the amount of free fatty acids transferred to liver and leads to hyperinsulinemia caused the development of NAFLD. In recent studies, IR, MetS, and liver fat content were found to be more

strongly related with the amount of VAT compared to the other obesity indicators such as body mass index and circumference waist.^[2,5]

In light of these informations mentioned above, considering important risk factors such as VAT that may possibly be associated with hepatosteatosis besides grading liver steatosis will allow us to make a better assessment in studies performed to manage and prevent NAFLD. In addition, more information about the mechanisms affecting these results will be obtained.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Fatih Ozcelik, Namik Ozmen¹

Department of Biochemistry, Gata Haydarpaşa Training Hospital, Istanbul, Turkey, ¹Department of Cardiology, Gata Haydarpaşa Training Hospital, Istanbul, Turkey

Address for correspondence:

*Prof. Fatih Ozcelik,
Department of Biochemistry, GATA Haydarpaşa
Training Hospital, Istanbul, Turkey.
E-mail: fozcelik@gata.edu.tr*

Received: 01 Jun 16 **Accepted:** 03 Feb 17

Published: 24 Aug 21

References

1. Asgharian A, Askari G, Esmailzade A, Feizi A, Mohammadi V. The effect of symbiotic supplementation on liver enzymes, C-reactive protein and ultrasound findings in patients with non-alcoholic fatty liver disease: A Clinical trial. *Int J Prev Med* 2016;7:59.
2. Lomonaco R, Ortiz-Lopez C, Orsak B, Webb A, Hardies J, Darland C, *et al.* Effect of adipose tissue insulin resistance on metabolic parameters and liver histology in obese patients with nonalcoholic fatty liver disease. *Hepatology* 2012;55:1389-97.
3. Pihlajamäki J, Boes T, Kim EY, Dearie F, Kim BW, Schroeder J, *et al.* Thyroid hormone-related regulation of gene expression in human fatty liver. *J Clin Endocrinol Metab* 2009;94:3521-9.
4. Ozcelik F, Yuksel C, Arslan E, Genc S, Omer B, Serdar MA, *et al.* Relationship between visceral adipose tissue and adiponectin, inflammatory markers and thyroid hormones in obese males with hepatosteatosis and insulin resistance. *Arch*

Letter to Editor

Med Res 2013;44:273-80.

5. Wajchenberg BL. Subcutaneous and visceral adipose tissue: Their relation to the metabolic syndrome. *Endocr Rev* 2000;21:697-738.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 license, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Quick Response Code: 	Website: www.ijpvmjournal.net/www.ijpm.ir
	DOI: 10.4103/ijpvm.IJPVM_203_16

How to cite this article: Ozcelik F, Ozmen N. The importance of visceral adipose tissue detected by imaging methods to assess nonalcoholic fatty liver disease properly. *Int J Prev Med* 2021;12:101.

© 2021 International Journal of Preventive Medicine | Published by Wolters Kluwer - Medknow