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Letters to the Editor

To what extent is it right to measure serum vaspin, obestatin, and apelin-36 levels without a protease inhibitor in nonalcoholic fatty liver disease?

To the Editor:

We have read the article entitled "Serum levels of vaspin, obestatin, and apelin-36 in patients with nonalcoholic fatty liver disease" published in 2010 in *Metabolism* with great interest. The authors, who studied peptide hormones in patients diagnosed with nonalcoholic fatty liver disease (NAFLD), found that vaspin and apelin from among these hormones increased significantly; but they did not establish a significant difference in obestatin levels [1]. It is known that NAFLD may later convert to nonalcoholic steatohepatitis (NASH) and cirrhosis [2]. γ-Glutamyl transpeptidase level elevates in NAFLD [3]. Furthermore, caspase levels increase in case the disease progresses toward NASH. It is known that the caspases are proteases that play a role in the development of NASH and that are required for apoptosis [2]. γ-Glutamyl transpeptidase, which is known to increase in NAFLD, is also a protease. Proteases easily break down peptide hormones [4]. Of the peptide hormones examined in this study, vaspin is made up of 395, apelin of 36, and obestatin of 23 amino acids. Therefore, to protect peptide hormones, particularly obestatin, against proteases, it is necessary to put the blood to be studied into biochemistry tubes containing a protease inhibitor [4,5]. Information about ways of protecting gastrointestinal tract peptides from breakdown that was available in 2009 has been refreshed [6]. In consideration of this information, to what extent have the proteases that increased because of NAFLD, for instance, elevated γ-glutamyl transpeptidase, broken down the measured peptides in the absence of protease inhibitors? If the blood had been transferred into biochemistry tubes containing protease inhibitors, would the level of obestatin still be statistically insignificant? We think that because of this mistake at the preanalytical level, the study results should be carefully interpreted and that it is important to study peptide hormones by adding 500 kallikrein inhibitor units of protease (such as aprotonin or phenylmethylsulfonyl fluoride) per milliliter of blood in future studies [4-6].

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REFERENCES

[1] Aktas B, Yilmaz Y, Eren F, Yonal O, Kurt R, Alahdab YO, et al. Serum levels of vaspin, obestatin, and apelin-36 in patients with nonalcoholic fatty liver disease. Metabolism 2010 [Epub ahead of print].
[2] Anstee QM, Concas D, Kudo H, Levene A, Pollard J, Charlton P, et al. Impact of pan-caspase inhibition in animal models of established steatosis and non-alcoholic steatohepatitis. J Hepatol 2010;53:542-50.
[3] Ghouri N, Preiss D, Sattar N. Liver enzymes, nonalcoholic fatty liver disease, and incident cardiovascular disease: a narrative review and clinical perspective of prospective data. Hepatology 2010;52:1156-61.
[4] Aydin S. Discovery of ghrelin hormone: research and clinical applications. Turk J Biochem 2007;32:76-89.
[5] Hosoda H, Doi K, Nagaya N, Okumura H, Nakagawa E, Enomoto M, et al. Optimum collection and storage conditions for ghrelin measurements: octanoyl modification of ghrelin is rapidly hydrolyzed to desacyl ghrelin in blood samples. Clin Chem 2004;50:1077-80.
[6] Stengel A, Keire D, Goebel M, Evilevitch L, Wiggins B, Tachè Y, et al. The RAPID method for blood processing yields new insight in plasma concentrations and molecular forms of circulating gut peptides. Endocrinology 2009;150:5113-8.