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Letter to the Editor

Interpretation of blood apelin level across different clinical pictures of diabetes mellitus



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To the Editor,

We read with interest the article by Noori-Zadeh et al. about blood apelin levels in type 2 Diabetes Mellitus (T2DM) [1]. The authors reported a meta-analysis that patients with T2DM have higher circulating apelin concentrations. The study is interesting, but we needed to acknowledge some comments regarding the design of the work, data analyses and interpretation of the results.

Firstly, beyond the statistical assumptions and calculations, a meta-analysis requires that included studies should be combinable both scientifically and in real life. As we know, circulating levels of cytokines and adipokines are seriously dependent on other factors including obesity, altered metabolic control (e.g., hyperglycemia or hypercholesterolemia), the existence of vascular complications (e.g., coronary heart disease) and medications. In their study, Noori-Zadeh et al. pooled all the patients with T2DM who were treatment naïve or had a long-standing disease, obesity and no obesity, neuropathy/retinopathy and neither of them, coronary heart disease or not, and matched and unmatched controls without carefully weighing. They also gave no information about current medications. These issues confound the results significantly as synthesis and secretion of active forms of apelin are altered in T2DM [2] and various non-metabolic conditions [3,4].

Second, according to the Figure 2 of the study, no study showed any reduced apelin level at all in subjects with T2DM, just a couple demonstrated similar levels with the controls, and the vast majority reported increased levels. In such a case, a meta-analysis may even be thought unnecessary. However, out of the 16 studies analyzed, six studies in fact reported increased (refers to the references 19, 26, 27, 29, 32,

33 in there) and three studies reported similar (refers to the references 20, 30, 34) levels of circulating (not vitreous) apelin in patients with T2DM compared to controls. Thus, the central figure of the study needs a thorough review.

Third, although the authors stated that they excluded one paper due to drug use before proceeding with the calculations, most studies they included enrolled subjects with longstanding disease and complications, making it unlikely to enroll individuals with T2DM free of medications. However, medications and lifestyle interventions may modify the blood apelin level [5].

Many studies from bench to bedside have focused on the “benefits” of apelin and its role as a treatment option in DM, while controversial findings were reached such as worsening of retinopathy in its increased vitreous levels [2,6]. To sum, in a meta-analysis based on biochemical assays in chronic conditions caution should be exercised during classification of the included subjects. We would also much appreciate a response from the authors of the study concerning the above comments.

Conflict of interest

None.

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