

The Relationship between Type 2 Diabetes Mellitus, Obesity and Vitamin D Deficiency

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OPINION

Vitamin D has a significant impact on insulin activity, as well as a variety of other pathways that may play a role in the development of type 2 diabetes. Vitamin D insufficiency is linked to obesity and type 2 diabetes in women of reproductive age. In the community of healthy women, vitamin D deficiency is very common. Low 25(OH) D levels were linked to a higher body fat percentage, higher glucose levels, and lower insulin sensitivity. Vitamin D insufficiency, we conclude, may be a risk factor for obesity and the development of insulin resistance, which can lead to type 2-diabetes.

Obese people (those who are more than 20% over their ideal body weight for their height) are at a higher risk of developing type 2 diabetes and the complications that come with it. Insulin resistance is common in obese people, so your pancreas has to work harder to produce more insulin. Keeping your blood sugar levels in the normal range, however, isn't enough. Type 2 diabetes treatments entails maintaining a healthy weight, eating well, and exercising. Some patients require medication as well. An A1C test may be performed a few times a year by your doctor to determine how effectively you've been regulating your blood sugar.

Previous epidemiologic studies suggested that vitamin D deficiency may be a risk factor of obesity and type 2 diabetes mellitus (DM). However, the result is still controversial. Type 2 DM and obesity are widely prevalent in Ukraine. The aim of the study was to determine the vitamin D status in relation to type 2 DM and obesity. This

cross-sectional study was conducted at the Bukovinian State Medical University from June to September 2019. Approval of ethical committee was taken. A total of 402 patients with type 2 DM and obesity were enrolled in this study. Vitamin D status was assessed using 25(OH)D levels. Height and weight of the patients were recorded to obtain BMI. Of the total sample, 283 (70.4%) were females and 119 (29.6%) were males. Mean age of the participants was 47.28 ± 14.83 years. Mean vitamin D levels were 19.03 ± 6.91 ng/ml. A total of 373 (92.8%) patients were either vitamin D deficient 171 (42.5%) or insufficient 202 (50.2%) while 29 (7.2%) were sufficient in vitamin D. As regards BMI and vitamin D status, the difference was statistically significant ($p=0.014$). Vitamin D deficiency is widely prevalent in Ukraine. There is also a high prevalence of obesity and type 2 DM and they are inversely related to low vitamin D levels.

BIOGRAPHY

Pankiv I. has completed his PhD at the age of 27 years from Ternopil State Medical University and postdoctoral studies from Kyiv Research Institute of Gerontology National Academy of Medical Sciences of Ukraine. He is Associate Professor of Department of Clinical Immunology, Allergology and Endocrinology at Bukovinian State Medical University. He has published more than 50 papers in reputed journals and has been serving as an editorial board member of International Journal of Endocrinology (Ukraine).

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