

Plant-based diet and vitamin B12

I have read the article entitled “Impact of plant-based diet on lipid risk factors for atherosclerosis” by Kuchta et al. [1], recently published in “Cardiology Journal”, with great interest. The investigators reported that vegan diet did not change the parameters expressly connected with high-density lipoprotein fraction, and lower concentration of total cholesterol, low-density lipoprotein cholesterol, as also a lower ratio of apoB/apoAI suggests that there could be a beneficial effect of a vegan diet for cardiovascular protection [1].

Vitamin B12 is required in the metabolism of homocysteine, which occurs through re-methylation to methionine or trans-sulfuration to cysteine [2]. Homocysteine-mediated increased lipid peroxidation and generation of free radicals result in inflammation and acute endothelial dysfunction, which accelerate atherosclerotic process predisposing to cardiovascular disease. Coronary artery disease is associated with higher levels of homocysteine [3], which plays a permissive role in endothelial damage. In general, low vitamin B12 concentration and hyperhomocysteinemia are commonly observed [4].

Abnormal vascular function and structure were also found in patients with vitamin B12 deficiency.

In association with metabolic vitamin B12 deficiency, their carotid intima–media thickness and brachial flow-mediated dilation were significantly worse than in patients with normal vitamin B12 [5].

In light of these facts, it might be beneficial to evaluate serum vitamin B12 and homocysteine levels due to close association with carotid intima–media thickness.

Conflict of interest: None declared

References

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