Lower extremity arterial plaque in patients with type 2 diabetes mellitus: A cross-sectional study of 25-(OH)D3 and other risk factors. Hang, X. et. al. *Journal of Diabetes and Its Complications,* 2024;38:108665. Published 2023 Dec 14.

DOI: 10.1016/j.jdiacomp.2023.108665.

Level of Evidence: 4

Reviewer:
Saad Nadeem, MBA, MS-2
Texas A&M School of Medicine

This research focused on investigating the relationship between serum levels of vitamin D (25 (OH)D3) and the formation and severity of plaques in the limbs of people with type 2 diabetes. The study included 628 patients who were grouped based on their intima-media thickness (IMT) and plaque echogenicity into categories such as no plaque (NP), low-risk plaque (LP), moderate-risk plaque (MP), and severe-risk plaque (SP). Furthermore, the participants were classified according to their vitamin D levels as either insufficient (VDI) or sufficient (VDS).

The results indicated that patients with plaques had lower levels of 25 (OH)D3 than those without in the NP group. Furthermore, there was a decrease in 25 (OH)D3 levels as the severity of plaques increased. In the LP group, the NP group had the highest proportion of patients with vitamin D levels, while those with deficient or insufficient levels were more common. According to the multivariate logistic regression analysis results, having low levels of 25 (OH)D3 is a risk factor for developing arterial plaques in the lower extremities of patients with Type 2 diabetes. The odds ratios indicated a likelihood of high-risk plaques in individuals deficient in vitamin D.

The research highlights the importance of monitoring serum vitamin D levels in individuals with Type 2 diabetes. Low vitamin D levels could play a role in the progression and onset of disease in the limbs. As a result, the study recommends a care approach that includes assessing and managing vitamin D status to lower the risk of issues in diabetic patients. This may involve testing for vitamin D levels, providing supplements as needed, and educating patients on why it's essential to maintain vitamin D levels.

This study emphasizes how vitamin D affects health and suggests that maintaining this vitamin could help protect against plaque and cardiovascular diseases linked to diabetes that impact the lower limbs. By stressing the need for healthcare professionals to work together, this research advocates for strategies aimed at enhancing outcomes related to complications from diabetes. This focus on collaboration helps highlight the role of the audience in improving results.
