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CD36 Level in Migraine Patients before and After Dietary Alteration of N-3 and N-6 Fatty Acids

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Abstract

CD36 is a surface marker found on platelets, monocytes, adipocytes, hepatocytes, and some epithelial cells. This transmembrane receptor protein plays a crucial role in various biological processes, including lipid metabolism and inflammation-related pathways.

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Short Commentary

Li et al. conducted a study where they observed a significant decrease in CD36 levels on monocytes in chronic migraine patients compared to matched non-migraineurs [1]. The study included fifteen patients selected from a clinical trial (ClinicalTrials.gov Identifier: NCT02012790) conducted between 2015 and 2016 [2]. The patients were matched with control participants based on age, gender, and BMI. The analysis method used was Wilcoxon signed-rank tests. During the 16-week intervention, the patients underwent substantial diet changes and received usual care. In the single-blind trial, the patients were provided with two meals per day and randomly assigned to one of the three groups: High omega 3 and low omega 6 (H3-L6), high omega 3 and high omega 6 (H3-H6), and the standard American diet, which is low in omega 3 and high in omega 6 (L3-H6). The report indicated that the H3-L6 and H3-H6 interventions could alter the bioactive mediators involved in headache pathogenesis, resulting in a decrease in headache frequency and severity. However, there was no significant improvement in the quality of life.

Considering the literature that highlights the relationship between migraine and CD36 levels, as well as the potential increase in CD36 levels following an omega 3-rich diet, further investigation is warranted [3,4]. Studies have shown that omega 3 consumption can induce the expression of CD36 in both animals and humans. CD36 may have a role to play in central nervous system inflammatory diseases, such as migraine. A diet rich in omega 3 has the potential to increase the expression of CD36 on peripheral monocytes after nutritional therapy. Therefore, our hypothesis is that CD36 expression on monocytes in migraine patients will increase following a high omega 3 intervention.

It is important to acknowledge certain limitations of the study conducted by Li et al. Due to the nature of the clinical trial and the limited duration of the fellowship training, the study only collected baseline samples and missed the opportunity for follow-up after the intervention.

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