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OUTTING-EDGE RESEAROH IN NATURAL HEALTH

Essential nutrients suppress inflammation by modulating key inflammatory gene expression

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Chronic inflammation is a complex biological cascade involving multiple substances called mediators or inflammatory markers, which are secreted by the white blood cells.

In this study, we evaluated the effects of a specific micronutrient combination on various markers of inflammation. Ibuprofen is the most commonly used drug with anti-inflammatory properties. We compared the effects of the micronutrient mixture and ibuprofen in cells and in animal models after experimentally inducing inflammatory response.

The in vitro results proved that the nutrient mixture was able to decrease the secretion of several inflammatory markers such as interleukins, interferon, cytokines, and tumor necrosis factor (TNF-alpha) by an average of 80-90%. In contrast, ibuprofen was able to reduce these markers only by 20-30%.

Cyclooxygenases (COX) are the enzymes that produce prostaglandins, which induce pain, fever and other symptoms of inflammation. The attempts to inhibit COX-2 activity by using drugs have not been successful due to the dangerous side effects these drugs generate, besides, ibuprofen is not able to effectively inhibit COX-2 enzymes. Our study has shown that the micronutrient mixture is highly effective in inhibiting COX-2 expression by 90% and controlling inflammation by NFkβ, (a protein that acts as an on-off switch for the body's inflammatory response). The micronutrient mixture was also able to suppress activation of NFkβ by 45%.

Moreover, we also compared the efficacy of individual nutrients in this mixture with the efficacy of the entire combination on secretion of prostaglandins and other pro-inflammatory factors. It was clear that the combination had a much greater inhibitory effect than any one component confirming the synergistic action of these micronutrients on multiple cellular mechanisms of inflammation.

Thus, in addition to being much safer, the micronutrient mixture was able to inhibit various markers of inflammation, and the effect was much stronger than ibuprofen.