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Intestinal permeability in migraine male patients upon omega-3 and tocopherol administration

Abstract:

Background. Gut microbiome may affect CNS, while an important neurotransmitter in migraine patients can be expressed in enteric neurons. Omega-3 PUFA (polyunsaturated fatty acid) and vitamin E are reported to decrease neuroinflammation, have beneficial effects on intestinal wall, and microbiota of the small intestine. This study aims to find the effect of omega 3 PUFA and vitamin E on intestinal permeability in migrainous, and their possible modulation effect on certain vitamins that have relations for both migraine and intestinal integrity.

Methods. A total of 21 migrainous men are included in this study. Blood samples were drawn before and after intake of omega-3 PUFA and vitamin E supplementation softgel once daily for 30 days to compare with 13 apparently healthy men (control group). The blood samples are used to measure serum lipopolysaccharide, zonulin, amylase, vitamin B12, vitamin D, and albumin. serum lipopolysaccharide, and zonulin.

Results. Body mass index, serum lipopolysaccharide and serum zonulin of migrainous men are higher, but vitamin B12 and vitamin D are lower than in the control group. Upon intake of supplement, serum zonulin and lipopolysaccharide are decreased in migrainous men indicating an improvement of intestinal integrity, but vitamin B12 and vitamin D showed no significant difference. Serum albumin and amylase showed no significant differences.

Conclusion. Omega 3 PUFA and vitamin E supplements decreased intestinal permeability and can be a useful as an adjunct therapy for migrainous men because of its positive effect on intestinal integrity and gut brain axis, but it has no significant effect on vitamin B12 and vitamin D levels.