



A Return to Homeostasis: The Pleiotropic Effects of Eicosapentaenoic Acid (EPA)

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Keywords

Icosapent ethyl; Gout; Diabetes; Coronary artery disease; Kidney transplant; EPA; Omega-3 fatty acids; Eicosapentaenoic; Chronic fatigue syndrome; COVID-19

Letter to the Editor

The purpose of this letter is to highlight three cases:

1) A 74-year-old male cadaveric kidney transplant recipient with a history of autosomal dominant polycystic kidney disease. His medical history is significant for multiple co-morbidities including chronic refractory gout, diabetes mellitus type 2, hypertension, dyslipidemia and coronary artery disease. After taking two grams of icosapent ethyl daily for six months, he demonstrated an attenuation of gout flares, reduction in Hemoglobin A1c (HbA1c), lower creatinine, lower C-Reactive Protein (CRP), endorsement of more energy with increased exercise tolerance, improved mood and less pain. Also of note, he stated that he has not had the common cold; which, for him is an unusually long period of time. During this time, he was able to wean his daily dosing of colchicine for gout. Due to an allopurinol allergy, he has been taking colchicine daily for gout prophylaxis over the past decade.

2) A 34-year-old Caucasian woman chronic fatigue syndrome and an elevated CRP for approximately 10 years. After initiating EPA therapy with 2 grams of icosapent ethyl daily for one month, she endorsed better energy and mood as well as more restful sleep. Her CRP levels also declined.

3) A 59-year-old Caucasian woman with a suspected COVID-19 infection status post antibiotic therapy with azithromycin developed a lingering productive cough persisting for approximately 3 weeks. After taking 2 grams of icosapent ethyl daily her symptoms resolved in 3 days.

Since publication of the REDUCE-IT results in 2018, icosapent ethyl has demonstrated considerable cardiovascular risk reduction [1]; however, clinical evidence suggests there may be many more benefits that need to be investigated further. Some authors suggest that a high omega-6/omega-3 ratio high-fat diet significantly contribute to metabolic disease states [2]. These diseases are numerous and include diabetes, atherosclerosis, obesity, gout and many other diseases of inflammation. The addition of icosapent ethyl is to help lower a person's omega-6/omega-3 ratio and contribute to improvement of diseases such as gout *via* mechanisms that are not entirely understood [3]. Currently, Eicosapentaenoic Acid (EPA) is believed to exert anti-inflammatory, virucidal [4], anti-cancer properties, reduce oxidative stress, and stabilize the cell lipid bilayer among other things. Interestingly, purified EPA may exert beneficial effects for patients with upper respiratory symptoms of viral infections; in the aforementioned case, a suspected COVID-19 infection. It is possible that EPA could blunt the cytokine release caused by COVID-19 as well as stabilize cell membranes, including the endothelium, against direct damage caused by the virus as well as counteract potential coagulopathies. Future studies with icosapent ethyl as an adjunct therapy are warranted across a wide range of disease states including metabolic diseases, autoimmune diseases, inflammation, dementia, proteopathies, mood disorders, viral infections, and certain cancers.

References

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