

Evening primrose oil in the treatment of atopic eczema: effect on clinical status, plasma phospholipid fatty acids and circulating blood prostaglandins

In a double-blind trial patients with atopic eczema received either oral evening primrose oil (EPO) (n = 14) or placebo (n = 11) for 12 weeks. In the EPO group a statistically significant improvement was observed in the overall severity and grade of inflammation and in the percentage of the body surface involved by eczema as well as in dryness and itch. Patients in the placebo group showed a significant reduction in inflammation. The patients receiving EPO showed a significantly greater reduction in inflammation than those receiving placebo. Evening primrose oil caused a significant rise in the amount of dihomogammalinolenic acid in the plasma phospholipid fatty acids. Plasma levels of TXB₂, 6-keto-PGF₁ alpha and PGE₁, and the amount of TXB₂ released into serum during clotting were not altered by evening primrose oil. Schalin-Karrila M, Mattila L, Jansen CT, Uotila P. *Br J Dermatol* 1987 Jul;117(1):11-19.

The role of essential fatty acids and prostaglandins in the premenstrual syndrome

Many of the features of the premenstrual syndrome are similar to the effects produced by the injection of prolactin. Some women with the premenstrual syndrome have elevated prolactin levels, but in most the prolactin concentrations are normal. It is possible that women with the syndrome are abnormally sensitive to normal amounts of prolactin. There is evidence that prostaglandin E₁, derived from dietary essential fatty acids, is able to attenuate the biologic actions of prolactin and that in the absence of prostaglandin E₁ prolactin has exaggerated effects. Attempts were made, therefore, to treat women who had the premenstrual syndrome with gamma-linolenic acid, an essential fatty acid precursor of prostaglandin E₁. Gamma-linolenic acid is found in human, but not cows', milk and in evening primrose oil, the preparation used in these studies. Three double-blind, placebo-controlled studies, one large open study on women who had failed other kinds of therapy for the premenstrual syndrome and one large open study on new patients all demonstrated that evening primrose oil is a highly effective treatment for the depression and irritability, the breast pain and tenderness, and the fluid retention associated with the premenstrual syndrome. Nutrients known to increase the conversion of essential fatty acids to prostaglandin E₁ include magnesium, pyridoxine, zinc, niacin and ascorbic acid. The clinical success obtained with some of these nutrients may in part relate to their effects on essential fatty acid metabolism. Horrobin DF. *J Reprod Med* 1983 Jul;28(7):465-468.

Effects of oral supplementation with evening primrose oil for six weeks on plasma essential fatty acids and uremic skin symptoms in hemodialysis patients

Abnormalities in plasma composition of essential fatty acids (EFAs) may be associated with the etiology of pruritus and other skin problems in patients undergoing hemodialysis. To study whether an oral supplementation with omega-6 (n-6) EFAs would restore deranged plasma EFAs and ameliorate skin symptoms, 9 and 7 dialysis patients were randomly assigned to receive either gamma-linolenic acid (GLA)-rich evening primrose oil (EPO) or linoleic acid (LA) (2 g/day each) for 6 weeks. Plasma concentrations of EFA were analyzed by gas chromatography and uremic skin symptoms were assessed for dryness, pruritus and erythema by questionnaire and visual inspection in a double-blind manner. The patients given EPO exhibited a significant (p < 0.05) increase in plasma dihomogamma-linolenic acid (a precursor of anti-inflammatory prostaglandin E₁) with no concomitant change in plasma arachidonic acid (a precursor of pro-inflammatory prostaglandin E₂ and leukotriene B₄). In contrast, those given LA exhibited a significant (p < 0.05) increase in LA but not in any other n-6 EFAs, whereas they exhibited a significant (p < 0.05) decrease in plasma docosahexaenoic acid. The patients given EPO showed a significant (p < 0.05) improvement in the skin scores for the three different uremic skin symptoms over the baseline values and a trend toward a greater improvement (0.05 < p < 0.1) in pruritus scores than those given LA. Results than LA in terms of shifting eicosanoid metabolism toward a less inflammation status through modifying plasma concentrations of their precursor n-6 EFAs. Further studies are required to confirm the efficacy and safety of EPO therapy for the treatment of uremic pruritus. Yoshimoto-Furuie K et al. *Nephron* 1999 Feb;81(2):151-9.