Supplementation of omega-3 fatty acids in patients with ankylosing spondylitis


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Summary:

A number of published studies have appeared in the evidence-based literature supporting a beneficial role for increased consumption of DHA/EPA omega-3 fatty acids in alleviating to varying degrees some of the troublesome symptoms expressed in patients with rheumatoid arthritis (normally on anti-inflammatory medications). Since ankylosing spondylitis (AS) represents a type of arthritis that affects the spine with associated pro-inflammatory mediators, the present study was conducted by these Swedish investigators.

Patients were enrolled in this study who were diagnosed by a rheumatologist for AS (see description of this disorder below). Active disease was measured according to the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) at the beginning, baseline, and at week 7, 14, and 21 during sequential visitations. At entry, the patients were randomized to receive either a low-dose or a high-dose of omega-3 fatty acids taken in the form of a supplementation daily over a 21 week period. Those on the high-dose supplementation regimen consumed 1.65g/day of DHA/ EPA combined (consisting of 1.05g EPA + 0.6 g DHA); this dose level was 2.3 times that of the low-dose group. At baseline, there were no differences in the BASDAI measures between the high-dose versus low-dose groups; however, a significantly lower measurement of disease activity based on the BASDAI assessment was found after 21 weeks in those on high-dose supplementation (an overall 32% reduction on disease activity) whereas no significant change in disease activity was found in the low-dose group.
The investigators concluded that omega-3 in adequate dosages (providing EPA+ DHA) may have the capacity to decrease the disease activity of AS while also recognizing the necessity for larger and better controlled studies in the future.

**Ankylosing Spondylitis (AS)** - Represents a rheumatoid arthritis-type of disease that affects the spine. The associated chronic inflammation of the spine and the sacroiliac joints gives rise to spinal pain and stiffness. The symptoms often include fatigue, pain, and stiffness in the lower back and other regions (with the symptoms often presenting in a worsened manner during the morning). Continuous inflammation of the spine over extended time periods (spondylitis) can eventually give rise to fusing of the vertebrae (ankylosis) with a loss of mobility. The onset of AS commonly occurs in younger adults between the ages of 18-36 with a moderately higher prevalence in men. Approximately 500,000 North Americans are considered to have AS. Although there is no known cure for the condition, various medications and treatments are available in the health care system to manage pain and other symptomology.

**Dr. Holub's Comments:**

This newly-reported clinical trial from the Swedish team of investigators is of considerable interest since it appears to be the first peer-reviewed study on the effects of omega-3 fatty acids (as DHA/EPA) in patients with AS. Although not specifically studied, the mechanisms for the apparent attenuating effect of omega-3 supplementation on the severity of symptoms associated with AS quite possibly involves a reduction in the generation of pro-inflammatory eicosanoids and cytokines as reported in previous studies in patients with rheumatoid arthritis where the anti-inflammatory effects of supplementing with DHA/EPA from fish oil sources have been reported. The present study utilized 24 patients who were randomly assigned to one of the two experimental groups. As the authors themselves have indicated, we can hopefully look forward to more extensive trials (with more patients and extended time periods) where varying dosages of omega-3 fatty acids containing differing amounts of DHA and EPA are evaluated in patients with AS.