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SCIENCE DIRECT

Surgical Neurology 65 (2006) 326–331

SURGICAL NEUROLOGY

www.surgicalneurology-online.com

Pain

ω-3 Fatty acids (fish oil) as an anti-inflammatory: an alternative to nonsteroidal anti-inflammatory drugs for discogenic pain†

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Received 3 October 2005; accepted 13 October 2005

Abstract

Background: The use of NSAID medications is a well-established effective therapy for both acute and chronic nonspecific neck and back pain. Extreme complications, including gastric ulcers, bleeding, myocardial infarction, and even deaths, are associated with their use. An alternative treatment with fewer side effects that also reduces the inflammatory response and thereby reduces pain is believed to be ω-3 EFAs found in fish oil. We report our experience in a neurosurgical practice using fish oil supplements for pain relief.

Methods: From March to June 2004, 250 patients who had been seen by a neurosurgeon and were found to have nonsurgical neck or back pain were asked to take a total of 1200 mg per day of ω-3 EFAs (eicosapentaenoic acid and decosahexaenoic acid) found in fish oil supplements. A questionnaire was sent approximately 1 month after starting the supplement.

Results: Of the 250 patients, 125 returned the questionnaire at an average of 75 days on fish oil. Seventy-eight percent were taking 1200 mg and 22% were taking 2400 mg of EFAs. Fifty-nine percent discontinued to take their prescription NSAID medications for pain. Sixty percent stated that their overall pain was improved, and 60% stated that their joint pain had improved. Eighty percent stated they were satisfied with their improvement, and 88% stated they would continue to take the fish oil. There were no significant side effects reported.

Conclusions: Our results mirror other controlled studies that compared ibuprofen and ω-3 EFAs demonstrating equivalent effect in reducing arthritic pain. ω-3 EFA fish oil supplements appear to be a safer alternative to NSAIDs for treatment of nonsurgical neck or back pain in this selective group.

Keywords: Spine pain; ω-3 EFA; Nonsteroidal anti-inflammatory drugs

1. Introduction

In 1971, Vane [34,35] suggested that blockage of the COX enzyme would inhibit the conversion of arachidonic acid to the very proinflammatory PGs that mediate the classic inflammatory response of pain (dolor), edema (tumor), elevated temperature (calor) , and erythema (rubor). Since then, NSAIDs that block COX have been used for analgesia and anti-inflammation for a plethora of medical conditions. More than 70 million NSAID prescriptions are written each year, and 30 billion over-the-counter NSAID tablets are sold annually. It is estimated that 5% to 10% of the adult US population and approximately 14% of the elderly routinely use NSAIDs for pain control [9].

This multibillion dollar industry, however, does not come without risk. NSAID-associated dyspepsia occurs in up to 50% of users [29]. Almost all patients who take the long-term nonselective (inhibits both COX 1/COX 2) NSAIDs will demonstrate subepithelial gastric hemorrhage, and 8% to 20% more will have ulceration. In addition, 3% of patients

Abbreviations: ALA, α-Linolenic acid; COX, Cyclooxygenase; DHA, Decosahexaenoic acid; EPA, Eicosapentaenoic acid; EFA, Essential fatty acids; FDA, Food and Drug Administration; IL, Interleukins; LOX, Lipoxygenase; MI, Myocardial infarction; NSAIDs, Nonsteroidal anti-inflammatory drugs; PG, Prostaglandin.

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† This paper won first prize in the poster competition at the AANS Annual Meeting, New Orleans, LA, April 2005.

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0090-3019/$ – see front matter © 2006 Elsevier Inc. All rights reserved.
doi:10.1016/j.surneu.2005.10.023