Dynamic Chiropractic

CHRONIC / ACUTE CONDITIONS

Making Sense of Chronic Inflammation

THE "SILENT KILLER" YOU MAY BE IGNORING.

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Inflammation is big business, evidenced by not only the laundry lists of medications patients bring me aimed at managing inflammation, but also the never-ending stream of advertisements for anti-inflammatory supplements that constantly find their way to my desk. With an aging population looking to live longer and function better in their later years, people are desperate for anything that might help them combat this mysterious enemy responsible for aching knees, degenerating joints, and even more serious conditions such as cancer and heart disease.

This isn't just a concern for seniors; inflammation needs to be taken seriously no matter what your age or physical condition. In fact, though hypertension has traditionally been known as the "silent killer," chronic inflammation deserves that reputation as well.

Unfortunately, whether by design or not, the pharmaceutical and supplement industries have made understanding inflammation incredibly confusing for the average consumer. Far too often this leads to patients either getting "locked on" to a minor part of the puzzle, thinking they're taking care of inflammation while ignoring the big picture; or simply giving up on preventing inflammation and just reaching for their NSAIDs instead.

Breaking Down Inflammation

Inflammation is the body's emergency response to an injury caused by an infection, environmental toxin, trauma or biomechanical dysfunction. When an inflammation response is triggered, soft tissue releases chemical signaling proteins called cytokines. These chemical messengers cause dilation of local capillaries, increasing blood flow to the area (resulting in warmth and redness) and allowing leakage of blood plasma into surrounding tissues (resulting in swelling and the pain associated with increased pressure on nerve endings).

Cytokines also make capillary endothelial cells "sticky," allowing white cells to rapidly move into the area and eliminate damaged tissue and invading pathogens. As the white blood cells work to clear out damaged tissue and/or foreign microorganisms, they release substances that cause additional pain and swelling.

Acute inflammation is a normal and necessary part of the body's healing process. In fact, when it comes to exercise, increased cytokine activity is actually beneficial: Cytokines increase muscle glucose uptake during exercise and set off a series of events required for muscle-fiber growth and repair afterward.

Short-term inflammation is normal; it only becomes a big deal when inflammation is long-term and systemic. Chronic inflammation can cause generalized joint and muscle pain, and the longer it goes on, the more likely it will lead to more serious health problems such as insulin resistance, DJD, heart disease, obesity, cancer and dementia, all of which are driven by chronic inflammation.

Getting Patients Past NSAIDs

While anti-inflammatory drugs aren't inherently evil, they are vastly overused and can be dangerous if abused. It's one thing to pop a few Advil once in a while to relieve soreness, but constant use can lead to trouble. NSAIDs (such as Motrin, Naproxen and Advil) inhibit muscle protein synthesis, and chronic overuse can lead to breakdown of joint cartilage. NSAIDs also interfere with the COX-1 enzyme, an important enzyme for stomach health. On the other hand, while COX-2 inhibitors (Celebrex, Vioxx, Bextra) leave the COX-1 enzyme alone, they've also been found to quadruple the risk of heart attack compared to traditional NSAIDs.

This presents a challenge for primary health care providers who need to be able to communicate simply and effectively to our patients what inflammation is, how it's triggered, and what they can do to minimize its negative effects without getting hooked on a long-term habit of anti-inflammatory drug use.

Simplifying Inflammation for Your Patients: Prevention Strategies

Although inflammation is a complex topic, when it comes to our patients we need to simplify, simplify, simplify. Follow the 80/20 principle: Eighty percent of the results comes from 20 percent of the effort. Stop making it more complicated than it needs to be!

- *Get a proper balance of omega-6 to omega-3 fats:* Prostaglandins, the lipid compounds derived from fats, can be either pro-inflammatory or anti-inflammatory. The prostaglandins produced by the breakdown of omega-6 fats are mostly pro-inflammatory, and the prostaglandins produced by omega-3 fats are mostly anti-inflammatory. Most Americans consume too much omega-6 fat and not enough omega-3 fat. The solution? Dump cooking oils made with corn, safflower and other omega-6 oils, choose grass-fed meat over grain-fed meat, and eat more cold-water fish (or take fish-oil supplements). Most adults should aim for an omega-6:omega-3 ratio of 2:1 or 3:1.
- *Avoid trans fats:* Trans fats inhibit the enzymes responsible for breaking down omega-3 and omega-6 fats, crippling your body's ability to process healthy fats normally.
- *Limit refined carbohydrates:* Consuming excess refined sugars contributes to inflammation both by increasing the production of pro-inflammatory prostaglandins and raising insulin levels, which isn't catastrophic by itself, but will eventually lead to increased inflammation.
- *Maintain a healthy weight:* Multiple studies have demonstrated that hypertrophic adipocytes produce inflammatory cytokines. The more excess weight you carry as fat, the more active those fat cells are and the more inflamed you'll be.
- *Increase dietary antioxidants:* Antioxidants are organic compounds found in fruits and vegetables that down-regulate the production of inflammatory cytokines. Ideally these come from diet, but supplemental vitamin A, C, E and D3 won't hurt if you're not getting enough.
- *Get adjusted regularly:* It's no secret that correcting joint dysfunction helps with the pain and edema associated with local inflammation, but a 2006 study by the Canadian Memorial Chiropractic College showed that chiropractic manipulation lowered systemic levels of inflammatory cytokines, suggesting regular chiropractic care can actually reduce chronic whole-body inflammation.

Ultimately, limiting chronic inflammation and preventing the health problems associated with it comes down to making sure patients are maintaining a healthy lifestyle and diet and recommending simple, uncomplicated tweaks as needed. The health care industry may have made inflammation more confusing than it should be, but that doesn't mean you and your patients shouldn't take action against the "silent killer" that is chronic inflammation.

Resources

- Teodorczyk-Injeyan JA, et al. Spinal manipulative therapy reduces inflammatory cytokines but not Substance P production in normal subjects. *JMPT*, 2006;29(1):14-21.

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- VÃizquez-Vela ME, et al. White adipose tissue as endocrine organ and its role in obesity. *Arch Med Res*, 2008;39(8):715-728.

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