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Flavocoxid, a natural approach to the management of osteoarthritis

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Humans have used botanical products as therapies for thousands of years. Only recently have active molecules have been identified, purified and their biochemical and physiological mechanisms determined. As a general rule, botanically derived compounds tend to have more benign side effects than synthetically designed drugs with similar therapeutic intent. For example, natural anti-inflammatory agents may not have the same side effect profile as non-steroidal anti-inflammatory drugs (NSAIDs) due to their broad and differing mechanisms of action. Flavocoxid (Limbrel®), a proprietary combination of baicalin and catechin purified from Scutellaria baicalensis and Acacia catechu, respectively, is indicated for the clinical dietary management of osteoarthritis (OA) under physician supervision as a medical food in the US. Rather than inhibiting the cyclooxygenase site of the COX enzymes as do NSAIDs, flavocoxid modulates the peroxidase moieties of COX-1 and COX-2, inhibits 5-lipoxygenase (5-LOX), and acts as an antioxidant both directly and by modulation of inducible inflammation through nuclear factor-κB (NFκB). Flavocoxid exhibits no major drug interactions, does not inhibit thromboxane production or affect platelet function, shows equivalent efficacy with statistically better gastrointestinal and renal safety compared to naproxen in head-to-head clinical trials and, in post-marketing surveillance, has not been reported to produce gastrointestinal bleeding, cardiovascular or renal toxicity. These broad mechanisms of action for flavocoxid appear to be additive providing a safer approach in the management of OA. Naturally occurring, less biochemically specifically targeted compounds should be considered as first-line therapeutics before the administration of more toxic NSAIDs for OA and other inflammatory conditions.

Biography

Dr. Burnett received his BS degrees in Biology and Chemistry from Eastern Washington University in 1987 and his MPh and a PhD in biochemistry and biophysics from Yale University (1989, 1992). He is the recipient of several NIH grants and has served on the ad hoc study section for review of NIH SBIR awards. Dr. Burnett serves on editorial boards of journals around the world and has numerous peer-reviewed publications in top tier journals. He has also taught at Yale and University of Colorado medical schools.

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