



HerbClip™

Mariann Garner-Wizard

Shari Henson

Dani Hoots

Samaara Robbins

Gavin Van De Walle, MS, RD, LN

Executive Editor – Mark Blumenthal

Managing Editor – Lori Glenn

Consulting Editors – Thomas Brendler, Meghan Henshaw, Kristen McPhee, MSciTH, Beth Quintana, ND, Carrie Waterman, PhD

**File: ■ Turmeric (*Curcuma longa*, Zingiberaceae)
■ Diclofenac
■ Knee Osteoarthritis**

HC 062034-659

Date: February 26, 2021

RE: Improvements in Knee Osteoarthritis Pain and Function Are Greater with Use of Curcuminoid Complex Plus Diclofenac Compared with Diclofenac Alone

Shep D, Khanwelkar C, Gade P, Karad S. Efficacy and safety of combination of curcuminoids complex and diclofenac versus diclofenac in knee osteoarthritis. *Medicine (Baltimore)*. April 2020;99(16):e19723. doi: 10.1097/MD.00000000000019723.

The pain associated with knee osteoarthritis (OA) causes reduced physical function and quality of life. Relieving pain, improving function, and slowing the progression of the underlying disease are elements of OA management. Nonsteroidal anti-inflammatory drugs (NSAIDs) are used to reduce pain and inflammation but are associated with increased risk for gastrointestinal bleeding, hypertension, congestive heart failure, and renal insufficiency. Diclofenac (Lupin Pharmaceuticals; Mumbai, India) is a commonly prescribed NSAID. Curcumin, a curcuminoid present in the rhizomes of turmeric (*Curcuma longa*, Zingiberaceae), has been shown to have anti-inflammatory and analgesic properties in clinical trials; however, poor oral absorption and rapid metabolism can affect its bioavailability. These authors conducted a prospective, randomized, open-label, parallel-group study to evaluate the efficacy, safety, and anti-ulcer effects of the curcuminoid complex BCM-95® (Arjuna Natural Pvt. Ltd.; Kerala, India) plus diclofenac compared with diclofenac alone in patients with knee OA.

The study was conducted at the Krishna Institute of Medical Sciences in Karad Maharashtra, India. Males and females aged 38-65 years who had symptomatic knee OA with moderate pain for at least three months that required treatment and who did not have any joint deformities were eligible. Their knee OA, identified by using the American College of Rheumatology criteria, was confirmed by x-ray.

Of the 161 patients who were screened, 150 met the eligibility criteria. The number of patients who completed the study included 69 patients who took a 50 mg diclofenac tablet twice daily and 71 patients who took a 500 mg BCM-95 capsule plus a 50 mg diclofenac tablet twice daily for 28 days. Each 500 mg BCM-95 capsule contains 95% standardized curcumin-essential oil complex with a 45% aromatic turmerone content. The patients were given the pain medication paracetamol (GlaxoSmithKline

Pharmaceuticals Limited; Brentford, United Kingdom) and the antacid ranitidine (J.B. Chemicals & Pharma Ltd.; Mumbai, India) to use as rescue medications.

Patients were evaluated on days 14 and 28 after beginning the treatment. The primary endpoint was change in the Knee Injury and Osteoarthritis Outcome Score (KOOS) at each visit. KOOS assesses the following outcomes: pain, symptoms, function in daily living, function in sport and recreation, and quality of life. Total scores range from 0 (extreme knee problems) to 100 (no knee problems). Secondary endpoints were the patient's global assessment of overall symptom relief and the physician's global evaluation of treatment and anti-ulcer effect, which was assessed by recording the number of patients who took H2 blocker tablets to reduce the amount of stomach acid. Adverse effects were recorded, and laboratory safety assessments were conducted. Baseline demographic and clinical characteristics were similar between the two groups.

The improvements in KOOS scores, except for daily living and function in sport and recreation, were significantly greater in the patients taking diclofenac plus BCM-95 compared with the patients taking diclofenac alone at the end of the study ($P < 0.001$). Greater reductions in pain were observed in the patients treated with diclofenac plus BCM-95 compared with those in the diclofenac group at day 14 and at day 28 ($P < 0.01$). Compared with the diclofenac group, fewer patients in the diclofenac plus BCM-95 group took H2 blockers ($P < 0.001$), and fewer patients needed rescue medications ($P < 0.005$). Excellent ratings were given by 30% of patients treated with diclofenac plus BCM-95 and by 17% of patients treated with diclofenac only.

Mild and transient adverse effects were reported by 13% of patients taking diclofenac plus BCM-95 and by 38% of patients taking diclofenac alone ($P < 0.001$). No significant changes were observed in liver and kidney function tests.

Limitations of this study include the lack of a placebo-controlled group, the short duration, the use of a subjective measurement of pain, and the fact that the different stages of knee OA were not considered.

The authors conclude that the "combination of curcuminoid complex and diclofenac showed a greater improvement in pain and functional capacity with better tolerability and could be a better alternative treatment option in symptomatic management of knee OA."

—*Shari Henson*

The American Botanical Council has chosen not to reprint the original article.

The American Botanical Council provides this review as an educational service. By providing this service, ABC does not warrant that the data are accurate and correct, nor does distribution of the article constitute any endorsement of the information contained or of the views of the authors.

ABC does not authorize the copying or use of the original articles. Reproduction of the reviews is allowed on a limited basis for students, colleagues, employees and/or members. Other uses and distribution require prior approval from ABC.