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Efficacy of *Curcuma longa* extract on inflammatory biomarkers and anti-oxidant enzyme levels in osteoarthritis of knee

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Objective: Osteoarthritis is a progressively debilitating, inflammatory disorder of synovial joints. As knee is the most affected synovial joint, the maximum research has been carried out on Osteoarthritis of Knee (KOA). Long term therapy with NSAIDs/steroids is used for the treatment of KOA, but due to the associated serious side effects of these drugs, the alternative system of therapies is need of hour. Hence, to evaluate the antioxidant and anti-inflammatory effects of *Curcuma longa* (CL) extract in the patients of KOA was used.

Materials & Method: This study was planned and designed as double blind, randomized, placebo-controlled trial conducted in 160 patients of KOA. After obtaining ethical clearance, patients were randomly enrolled into two groups viz. CL extract group (78 patients) and placebo group (82 patients) and were given 500 mg twice a day either CL extract or placebo for four months. Diclofenac (50 mg BD) was given as add on therapy to the patients of both the groups.

Result: The study has proved that long term therapy of KOA with CL extract as an adjuvant with diclofenac provides significant ($p < 0.05$) improvement in pain and relief in discomfort as analyzed through Visual Analogue Scale (VAS) and Western Ontario and McMaster Universities Arthritis Index (WOMAC). There was improvement in the level of anti-inflammatory biomarker IL-10 and MMP-9 as compared to placebo. Further, the level of antioxidant enzymes such as superoxide dismutase and catalase also showed improvement in CL extract group as compared to placebo group. Similarly, uric acid levels also showed significant reduction ($p < 0.05$) in CL extract group as compared to placebo group.

Conclusion: The improvement in WOMAC and VAS may be subjective; however, the levels of biomarkers are certain objective parameters which confirm the status of anti-inflammatory and antioxidant activity of CL extract in KOA patients.

Biography

Shobhit Srivastava is an Assistant Professor at Era University, India. His primary research interest aims at pharmacognosy and plant extracts.

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