Zerumbone significantly improved immunoreactivity in the synovium compared to Channa striatus extract in monosodium iodoacetate (MIA)-induced knee osteoarthritis in rat.

ABSTRACT

The main aim of this study was to compare the immunoreactivity of some osteoarthritis related neuropeptides following oral administration of two natural remedies that is Channa striatus extract and zerumbone against monosodium iodoacetate induced knee osteoarthritis changes in the rat's synovial membrane. Assay of PGE2 and PGF2α in the serum were performed to evaluate their role during osteoarthritis events and post oral application of the treatment. Forty rats were divided equally into four groups. Rats in the first and second groups were received channa extract and zerumbone, respectively. Rats in the third group were treated with celecoxib, whereas the fourth group was treated with normal saline. Evaluation of immunoreactivity of the following neuropeptides: Protein gene product 9.5, calcitonin gene related peptide and neuropeptide Y in the synovial membranes was implemented with the aid of both histopathology and immunohistochemistry approaches. Results revealed lower pathology score in both first and second groups accompanied with markedly improved immunoreactivity in zerumbone treated groups compared to channa extract group. Significant different concentrations of PGE2 but not PGF2α were detected within studied groups. Both remedies significantly improved the immunoreactivity which appeared more apparent in the group treated with zerumbone. Prostaglandin E2 has a role in osteoarthritis development and regulation.

Keyword: Channa striatus; Osteoarthritis; Neuropeptides; Zerumbone; Monosodium iodoacetate; Rat.