



## Correlation studies of Mg concentration in Joint fluid of Arthritis patients under the treatment of Indigenous and Modern medicinal system

### Research Article

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### Abstract

Magnesium (Mg), an essential cation is abundantly found in skeletal and cardiac muscle cells. It is necessary to investigate the role of essential elements in joint effusion as they may serve as non-invasive diagnostic tool for the characterization of joint diseases. In the present paper, the concentration of Mg localized in joint fluid of arthritis patients under the treatment of Allopathy and Polyherbal formulations has been carried out. The quantitative assessment of Mg was determined by Inductively Coupled Plasma Atomic emission spectroscopy (ICP-AES). The patients with cases of proved Osteoarthritis (OA), Rheumatoid arthritis (RA) and Bursitis were included for the study. Synovial (SF) and Bursal fluid (BF) samples were aspirated by arthrocentesis. The levels of Mg were found to be significantly lesser ( $P < 0.05$ ) in arthritis patients under the treatment of modern medicines when compared to controls. However patients under the treatment of PF showed levels of Mg highly comparable to controls. Subsequently the possible prevalence of dwindling Mg in joint effusions has been inferred as a potential diagnostic biomarker in etiology of arthritis. Furthermore the therapeutic impact of PF due to bioavailable form of Mg implicates a stimulus for adept joint health.

**Keywords:** Synovial fluid, Osteoarthritis, Rheumatoid Arthritis, Bursitis, Magnesium, Polyherbal formulation.

### Introduction

Over the last few years there is an extensive advancement in analysis of trace

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elements by the development of ICP-AES especially for liquid samples. ICP-AES provides excellent analytical features, such as high sensitivity for elements, wide linear dynamic ranges of calibration curves and simultaneous multielement detection capabilities. These analytical features clearly implicate its detection usability over a wide range, i.e., ppm to ppb level in different geochemical, biological and environmental samples.