

## ***Correlation of Inflammatory Markers with Age and Selected Clinical Symptoms Associated with Lumbar Disc Herniation***

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Inflammation plays a major role in exacerbating lumbar disc herniation (LDH) due to irritation of neural elements associated with herniated lumbar discs. This eventually results in increased pain and worsening of symptoms. Elevated level of specific cytokines is reported with different pathology. This study aims to assess the correlation of inflammatory markers with age and selected clinical symptom associated with LDH. A cross-sectional study with subjects diagnosed with LDH and undergoing lumbar microdiscectomy were recruited (n=25) using convenience sampling, where age and clinical details such as presence of radicular pain, results of straight leg raise test (SLRT Positive/ Negative) were recorded. Patients who were diagnosed to have autoimmune disorders, any disease within the past two weeks that could elevate inflammatory marker and pregnant females were excluded. Blood specimens were collected to determine the serum levels of Interleukin- 6 (IL-6) and Tumor necrotic factor-alpha (TNF- $\alpha$ ) using an Enzyme-Linked Immunosorbent assay technique. The correlation of cytokines level with the aforementioned variables were assessed. Spearman rank correlation test (Python version 3.10) was used to assess strength (R) and significance (p) for the above. Among the LDH subjects, 44% of patients reported with lumbar radicular pain. The patients with radicular pain had increased mean IL-6 (424.14pg/ml) compared to those without radicular pain (209.86pg/ml). whereas similar mean values were observed for TNF-  $\alpha$  in patients with (71.59pg/ml) and without (71.88 pg/ml) radicular pain. Statistically significant positive correlation was obtained between IL-6 and lumbar radicular pain (R = 0.42, (p<0.05), while TNF- $\alpha$  showed a weak positive correlation which was statistically not significant. Further, IL-6 showed a weak positive correlation with age and SLRT, while TNF-  $\alpha$  showed a weak negative correlation with SLRT and a weak positive correlation with age and radicular pain which did not show any statistical significance. IL-6 was found to be the predominant cytokine associated with lumbar radicular pain and further studies with a large population are warranted to discover the possible functional role of IL-6 in the pathophysiology of lumbar radicular pain.

**Keywords:** IL-6, TNF-A, Lumbar Radicular Pain, Straight Leg Raise Test

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