Inflammatory index

The inflammatory index can be useful for neurosurgeons to understand and grade pain in intervertebral disc degeneration (DIVD).

The study focused on the value of the platelet-to-lymphocyte ratio (PLR), neutrophil-to-lymphocyte ratio (NLR), and the inflammatory multiple indices (MIs), and aimed to compare its efficiency with the preoperative and postoperative pain scale and scoring algorithms.

Material and methods: A total of 88 DIVD patients were included in this retrospective clinical cohort study. Visual Analogue Scale Back (VASB) and Visual Analogue Scale Leg (VASL), Oswestry Disability Index (ODI), Roland-Morris Disability Questionnaire (RMDQ), and walking distance (WD) were used to assess pain. The multiple index (MI) was calculated as MI-1 = PLR × C-reactive protein (CRP) and MI-2 = NLR × CRP.

Results: Comparing the MI with ODI, no correlation was found in preoperative values, while a positive correlation (MI-1: $r = 0.398$, $p < 0.001$; MI-2: $r = 0.285$; $p = 0.007$) was found between the postoperative measurements. A significant correlation was found for VASB and both MI-1 (preoperative: $r = 0.373$, $p = 0.001$; postoperative: $r = 0.232$, $p = 0.041$) and MI-2 (preoperative: $r = 0.388$, $p < 0.001$; postoperative: $r = 0.206$, $p = 0.044$). The MI-1 index showed 71.4% sensitivity and 73.3% specificity, while the MI-2 index exhibited 78.6% sensitivity and 68.9% specificity.

Conclusions: MI-1 and MI-2 showed a positive correlation with preand post-operative VASB score and had strong potential to predict postoperative pain in DIVD. They are easy-to-use, noninvasive and low-cost indices; therefore, our results are promising for routine application [1)].

1)
Firidin MN, Akyüz ME. Preoperative and postoperative diagnostic efficiency of multi-inflammatory index on pain scoring of degenerated intervertebral disc. Adv Clin Exp Med. 2022 May 11. doi: 10.17219/acem/149336. Epub ahead of print. PMID: 35543200.

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