

Platelet/Lymphocyte Ratio: A Potential Biomarker for Disease Activity in Ankylosing Spondylitis. EJ Kim, MD.,GS; R Sen, MD MS; ES Manning, MD; ER Anderson, MD; KD Maier, MD; E Cheng, BA; L Caplan, MD PhD, Department of Rheumatology, Rocky Mountain Regional Veterans Affairs Medical Center, Aurora, CO.

Ankylosing spondylitis (AS) is a chronic inflammatory disease involving erosions or fusion of the sacroiliac joint (SIJ) and spine which can be debilitating. The most commonly used biomarker of disease activity, c-Reactive Protein (CRP), has been shown to have low specificity and sensitivity. Prior studies have shown that the neutrophil/lymphocyte ratio (NLR) and platelet/lymphocyte ratio (PLR) are associated with inflammatory disease activity and severity. This study evaluates the utility of the NLR/PLR as biomarkers for AS disease activity and severity by examining their association with CRP and SIJ damage scores.

Data was drawn from the Program to Understand Long-Term Outcomes of Spondyloarthritis registry at the Rocky Mountain Regional VA Hospital. SIJ radiographs were scored for sacroiliitis based on the modified New York (mNY) radiographic criteria. CRP and absolute neutrophil, lymphocyte, and platelet counts were collected within 6 months of the radiograph. The relationship between NLR, PLR, CRP and mNY scores was determined using regression techniques in the STATA (v13) statistical package.

42 patients met radiologic mNY radiologic criteria for sacroiliitis. No statistically significant correlation was found between mNY radiograph scores and the NLR nor the PLR, but CRP concentration was associated with the PLR ($R^2= 0.3205$, $p < 0.001$).

Though our study did not show a correlation between NLR and PLR, we did identify a relationship of PLR and CRP. Further studies are needed to validate these results in other populations, explore the relationship of PLR with patient reported outcomes, and determine if PLR is associated with findings from other imaging modalities.