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The Association Between Hematological Parameters and Polysomnographic Findings

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Objectives: Previous studies have shown different results about the relationship between obstructive sleep apnoea syndrome and neutrophil to lymphocyte ratio (NLR), platelet to lymphocyte ratio (PLR), mean platelet volume (MPV). By this study we aimed to determine the relationship between sleep parameters and NLR, PLR, MPV values of our patients.

Methods: Polysomnography records of 100 patients were retrospectively evaluated. Data regarding their demogrophical, hematological parameters were obtained from the database of the hospital. Comparisons were made according to the following parameters; apnoea-hypopnoea index (AHI), snoring index, Epworth sleepiness scale, presence of obstructive apnoea and nocturnal time spent with arterial oxygen saturation<88%.

Results: Out of 100 patients 69 of them was male and 31 of them was female. Mean age of them was 46.9±12.6 (min 20-max 80), mean body mass index of them was 33.8±7.8, mean Epworth sleepiness scale of them was 6.7±4.4 (min 0-max 24) and mean AHI of the study population was 29.1±21.1. There was a negative correlation between MPV and AHI (r:- 0.269) and Epworth sleepiness scale (r:-0.273). Also a lower MPV value than 6.66 fL was found to have an association with presence of severe obstructive sleep apnoea syndrome (OSAS) (AHI>30) with 53.1% sensitivity and 78.9% specificity (p:0.006). Additionally PLR was negatively associated with nocturnal time spent with arterial oxygensaturation<88% (r:-0.236). However there was no statistically significant association between NLR and any other sleep parameters.

Conclusion: In this study we found no association between NLR and any of our sleep parameters, but there was a negative correlation between PLR and desaturation time, MPV and presence of severe OSAS. Our findings are inconsistent with most of the previous similar studies. Therefore it is difficult to always use these hematological values for predicting sleep related disorders.

Keywords: OSAS, polysomnography, NLR, PLR, MPV