

MONOCYTE-TO-HDL CHOLESTEROL RATIO AND HEMATOLOGIC INDEXES OF INFLAMMATION IN THE PATIENTS WITH PTERYGIUM

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Introduction / Purpose

Pterygium is a wing-shaped conjunctival fibrovascular tissue that crosses-over the limbus and invades the corneal surface. The pathophysiological mechanisms underlying the initiation and progression of the pterygium has not yet been fully understood. Elevated inflammatory mediators in the pterygium specimens are the signs of the inflammatory process in the pterygium development. (1-3)

In this study, we aimed to evaluate the systemic inflammation in the patients with pterygium using the monocyte-to-HDL cholesterol ratio (MHR) and hematologic indexes of inflammation including neutrophil-to-lymphocyte ratio (NLR), monocyte-to-lymphocyte ratio (MLR), platelet-to-lymphocyte ratio (PLR), eosinophil-to-lymphocyte ratio (ELR), monocyte-to-eosinophil ratio (MER), mean platelet volume-to-platelet count ratio (MPV/PC), platelet distribution width (PDW) and red cell distribution width (RDW).

Methods

Thirty-one patients with primary pterygium (Pterygium group) and 31 age- and sex- matched healthy subjects (Control group) were enrolled in this retrospective study. MHR, NLR, MLR, PLR, ELR, MER, MPV/PC, PDW and RDW were compared between two groups.

Results

The mean ages in the pterygium and control groups were 48.16±13.61 years and 48.89±11.08 years, respectively. There were not statistically significant differences in terms of age and gender between pterygium and control groups ($p>0.05$). There was not a statistically significant difference in terms of MHR between pterygium and control groups ($p=0.693$). NLR was higher in pterygium group according to the control group. In the other hematologic indexes (MLR, PLR, ELR, MER, MPV/PC, PDW, RDW) there were not statistically significant differences between the two groups ($p>0.05$ for all). (Table 1)

Discussion / Conclusion

The main characteristics of pterygium development are inflammation, angiogenesis and fibrosis. (4-6) Although the etiology of the pterygium is not known exactly, ocular surface inflammation plays an important role in the pathogenesis of pterygium. In addition to the local inflammation, it is suggested that systemic inflammation may also be involved in this process. (4,5,7)

In conclusion of this study, MHR is not associated with the presence of pterygium. Increased NLR may be an indicator of systemic inflammation in the patients with pterygium.

| | Pterygium Group | Control Group | p value |
|--|------------------|------------------|--------------|
| MHR (Monocyte/HDL cholesterol ratio) | 10.313 (8.676) | 11.264 (7.320) | 0.693 |
| NLR (Neutrophil/Lymphocyte ratio) | 2.167 (4.004) | 1.573 (0.735) | 0.028 |
| MLR (Monocyte/Lymphocyte ratio) | 0.262 (0.231) | 0.241 (0.083) | 0.163 |
| PLR (Platelet/Lymphocyte ratio) | 119.802 (71.867) | 104.576 (36.127) | 0.081 |
| ELR (Eosinophil/Lymphocyte ratio) | 0.055 (0.064) | 0.057 (0.053) | 0.721 |
| MER (Monocyte/Eosinophil ratio) | 4.857 (3.764) | 4.817 (4.369) | 0.767 |
| MPV/PC (MPV/Platelet count ratio) (*10 ⁻⁵) | 3.802 (1.592) | 3.830 (1.614) | 0.606 |
| PDW (Platelet Distribution Width) | 11.700 (2.400) | 12.150 (2.525) | 0.660 |
| RDW (Red Cell Distribution Width) | 13.300 (1.100) | 12.750 (1.475) | 0.091 |

Table 1. Monocyte-to-HDL cholesterol ratio and hematologic indexes of inflammation in the pterygium and control groups (Data are presented as median (interquartile range), p value: statistical significance in the Mann-Whitney U test)

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