Online publication ahead of print, AJMHS Vol 66, 2024

Investigation of the Relationship Between Transient Thyrotoxicosis of Pregnancy and Neutrophil/Lymphocyte Ratio - A Cross-Sectional Study

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Abstract

Background: Gestational transient thyrotoxicosis (GTT) is a type of non-autoimmune hyperthyroidism seen during pregnancy. It occurs due to an increase in hCG levels in the first trimester of pregnancy. The level of hCG decreases as the pregnancy progresses, and it usually resolves spontaneously on its own. It has been found that both neutrophil/lymphocyte ratios (NLR) as well as platelet/lymphocyte ratios (PLR) are pro-inflammatory markers associated with systemic inflammation. Numerous studies have been performed on both of these markers.

Aim: Our aim with this study was to identify factors associated with gestational transient thyrotoxicosis, especially those NLRs and PLRs that are indicative of inflammation, in order to identify potential risk factors.

Study Design: Using the hospital's registry system, 60 pregnant women with transient thyrotoxicosis and 60 healthy pregnant women who applied to the Internal Medicine outpatient clinic between January 2021 and 2023 were retrospectively reviewed. The patients' age, hemoglobin, white blood cell count, neutrophil, lymphocyte, basophil, monocyte, platelet count, NLR, PLR, TSH, fT3, and fT4 values were examined.

Results: In pregnant women with GTT, NLR averages were 3.55±1.37, while in healthy controls, they were 3.48±1.25 ($p = 0.96$). In pregnant women with GTT, PLR averages were 133597.21±55951.37, while in healthy controls,

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they were 119307.25±40490.29 (p = 0.19). In pregnant women with GTT, platelet count averages were 245766.6±49154.32, while in healthy controls, they were 231383.3±63338.50 (p = 0.04).

Conclusion: It was found that there was no significant relationship between GTT and either NLR or PLR, but there was a significant relationship between platelet count and GTT. Consequently, we can reach a conclusion that GTT is not related to any diseases involving inflammation. We believe that prospective studies with a large number of patients will reveal more information on this matter in the future, due to the limitations of our study.

Keywords: thyrotoxicosis, gestational transient thyrotoxicosis, neutrophil/lymphocyte ratio, platelet/lymphocyte ratio