

# Comparison of Stroke Cases with Other Neurological Diseases on the Basis of Hemogram Parameters

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## Abstract

**Background** This study aimed to examine the hemogram parameters, including the neutrophil/lymphocyte ratio (NLR), which is fast, easy and practical to determine, in stroke patients who present with more physiological stress and inflammation and compare them with patients presenting other neurological diseases. **Methods** The demographic, laboratory and imaging features of all patients who were admitted to the Neurology Service within a three-year period and met the study criteria were retrospectively analyzed. A hemogram from peripheral venous blood samples was taken at the time of admission, and the NLR was calculated. **Results** A total of 3,152 patients, 1,604 of whom were women (50.9%), with a mean age of  $66.1 \pm 14$  (18-100) years who were hospitalized in the neurology clinic between January 1, 2015 and January 1, 2018, comprised the study's sample. Mean age, mean leukocyte-neutrophil count and NLR were significantly higher in stroke patients than in those without stroke ( $p < 0.001$ ,  $p < 0.001$  and  $p < 0.001$ , respectively), but mean red blood cell, platelet and lymphocyte counts, and hemoglobin and hematocrit values were found to be significantly lower ( $p < 0.001$ ,  $p < 0.001$ ,  $p < 0.001$ ,  $p < 0.001$  and  $p < 0.001$  respectively). When the hemogram parameters were compared according to stroke type, red blood cell, hemoglobin, hematocrit and NLR values in patients with hemorrhagic stroke ( $p = 0.019$ ,  $p = 0.002$ ,  $p = 0.002$  and  $p = 0.001$ , respectively) and platelet and lymphocyte values in ischemic stroke patients were found to be significantly higher ( $p = 0.002$  and  $p < 0.001$ , respectively). **Conclusion** In this study, significant data obtained by comparing the hemogram parameters of those with stroke and other neurological diseases are presented. All neurological diseases, especially acute stroke and its types, should be examined in future prospective, randomized and controlled studies with all hemogram parameters, especially the NLR (low cost)

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### Methods

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## Conclusion

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## What is already known about this topic?

It has been found in many studies in the literature that NLR increases in stroke patients due to increased physiological stress. However, information on other hemogram parameters is limited.

## What does this article add?

In our study, significant changes were found in hemogram parameters (RBC, hematocrit, platelet count) other than NLR in stroke patients. These parameters can be used in the diagnosis of stroke.

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