

Neutrophil to albumin ratio

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The neutrophil-to-albumin ratio is a medical parameter that is calculated by dividing the absolute neutrophil count (ANC) by the serum albumin level. It is used in clinical medicine as a potential marker for various health conditions, especially those related to inflammation, infection, and overall health. Here's a brief explanation of the components involved:

Neutrophils: Neutrophils are a type of white blood cell (leukocyte) that play a crucial role in the immune system's response to infections and inflammation. An elevated neutrophil count can indicate an ongoing inflammatory response or infection.

Albumin: Albumin is a protein found in the blood and is synthesized by the liver. It serves various functions, including maintaining oncotic pressure, transporting substances in the blood, and acting as an antioxidant. Low levels of albumin in the blood can be associated with malnutrition, liver disease, kidney disease, or other health conditions.

The neutrophil-to-albumin ratio is used in clinical settings to assess the inflammatory and nutritional status of a patient. A higher ratio may indicate a more pronounced inflammatory response, while a lower ratio could suggest possible malnutrition or other health issues.

It's important to note that the neutrophil-to-albumin ratio is just one of many markers and should be interpreted alongside other clinical and laboratory findings. It is not a definitive diagnostic tool on its own, but rather a part of the overall assessment of a patient's health. The interpretation of this ratio and its significance can vary depending on the specific context of a patient's condition and the judgment of healthcare professionals.

The [prognosis](#) of [aneurysmal subarachnoid hemorrhage](#) (aSAH) [survivors](#) is concerning.

The goal of Zhang et al. in a study was to investigate and demonstrate the relationship between the neutrophil-to-albumin ratio (NAR) and long-term mortality of aSAH survivors. A [retrospective observational cohort study](#) was conducted at Sichuan University West China Hospital between January 2009 and June 2019. The [investigation](#) of the relationship between NAR and long-term [mortality](#) was

conducted using [univariate](#) and [multivariable Cox regression models](#). To demonstrate the [predictive performance](#) of different [biomarkers](#) over time, time-dependent [receiver operating characteristic curve](#) (ROC) analysis and [decision curve analysis](#) (DCA) were created.

In total, 3173 aSAH patients were included in this study. There was a strong and continuous relationship between NAR levels and long-term mortality (HR 3.23 95% CI 2.75-3.79, $p < 0.001$). After [adjustment](#), the result was still significant (adjusted HR 1.78 95% CI 1.49-2.12). Compared with patients with the lowest quartile (< 0.15) of NAR levels, the risk of long-term mortality in the other groups was higher (0.15-0.20: adjusted HR 1.30 95% CI 0.97-1.73; 0.20-0.28: adjusted HR 1.37 95% CI 1.03-1.82; >0.28 : adjusted HR 1.74 95% CI 1.30-2.32). Results in [survivors](#) were found to be still robust. Moreover, out of all the inflammatory markers studied, NAR demonstrated the highest correlation with long-term mortality.

A high level of [Neutrophil to albumin ratio](#) was associated with increased long-term mortality among patients with aneurysmal subarachnoid hemorrhage. [Neutrophil to albumin ratio](#) was a promising inflammatory marker for the long-term mortality of aSAH ¹⁾.

¹⁾

Zhang R, Zhang Y, Liu Z, Pei Y, He Y, Yu J, You C, Ma L, Fang F. Association between neutrophil-to-albumin ratio and long-term mortality of aneurysmal subarachnoid hemorrhage. BMC Neurol. 2023 Oct 19;23(1):374. doi: 10.1186/s12883-023-03433-x. PMID: 37858065.

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Last update: **2024/06/07 02:51**

