Neutrophil / Lymphocyte ratio and the Severity of Coronary Artery Disease

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Introduction: The white blood cell count (WBC) is an independent predictor of cardiovascular events and may identify high-risk individuals who are not currently identified by traditional risk factors. WBC also correlates with the severity of coronary artery disease (CAD). The Neutrophil/Lymphocyte ratio (N/L ratio) has recently emerged as a potential new biomarker to single out individuals at risk for future vascular events. However, the correlation between N/L ratio and CAD severity has not been evaluated.

Methods: The association between N/L ratio and CAD severity was prospectively tested in 2069 consecutive patients undergoing coronary angiography. In order to ascertain the importance of the different biomarkers, we conducted a linear regression with CAD severity as the dependant variable, and WBC, CRP, fibrinogen, C3, C4 as the independent variables.

Results: A significant (p<0.0001) correlation (r=0.16) was noted between the N/L ratio and CAD severity. This correlation was maintained in different clinical sub-groups: Diabetics and non-Diabetics, patients treated or not treated with statins, as well as in those with or without acute coronary syndrome. The N/L ratio was as good if not better than quantitative fibrinogen or CRP in these different subgroups. In a linear regression, N/L ratio was significant while CRP was not.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{mean_neulym_ratio.png}
\caption{Mean Neulym Ratio}
\end{figure}

Conclusion: Higher N/L ratio correlates with more severe CAD. This association gives further evidence for the potential of use of this novel biomarker in ischemic heart disease.