

Complete blood count (CBC)-derived inflammation indexes are useful in predicting metabolic syndrome in adults with severe obesity.

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Metabolic syndrome (MetS) is a globally increasing pathological condition. Recent research highlighted the utility of complete blood count-derived (CBC) inflammation indexes to predict MetS in adults with obesity. This study examined CBC-derived inflammation indexes (NHR, LHR, MHR, PHR, SIRI, AISI, and SII) in 231 adults with severe obesity (88 males, 143 females; age: 52.3 [36.4-63.3] years), divided based on the presence (MetS+) or absence (MetS-) of MetS. The relationships between the indexes and the cardiometabolic risk biomarkers HOMA-IR, TG/HDL-C, and non-HDL-C were also evaluated. Individuals with metabolic syndrome (MetS+) had significantly higher values of MHR, LHR, NHR, PHR, and SIRI than those without (MetS-) (MHR and NHR: $p < 0.0001$; LHR: $p = 0.001$; PHR: $p = 0.011$; SIRI: $p = 0.021$). These values were positively correlated with the degree of MetS severity. Logistic regression (MHR and NHR: $p = 0.000$; LHR: $p = 0.002$; PHR: $p = 0.022$; SIRI: $p = 0.040$) and ROC analysis (MHR: AUC = 0.6604; LHR: AUC = 0.6343; NHR: AUC = 0.6741; PHR: AUC = 0.6054; SIRI: AUC = 0.5955) confirmed the predictive potential of CBC-derived inflammation indexes for MetS in individuals with severe obesity. CBC-derived inflammation indexes also correlated with HOMA-IR (MHR, LHR, and NHR: $p < 0.0001$; PHR: $p < 0.001$; SIRI: $p = 0.000$) and TG/HDL-C (MHR, LHR, NHR and PHR: $p < 0.0001$; SIRI: $p = 0.006$). In conclusion, this study validates CBC-derived inflammation indexes for predicting MetS in individuals with severe obesity. The relationships between these indexes and cardiometabolic risk factors can enable clinicians to better grade MetS associated with obesity.

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