

Prognostic Value of Neutrophil-to-Lymphocyte Ratio in Patients with Acute Decompensated Heart Failure. A Meta-analysis

Song Peng Ang, Jia Ee Chia, Vikash Jaiswal, Tong Hong Chia, Masih Lali, Manan Parikh, Jose Iglesias

Department of Internal Medicine, Rutgers Health/ Community Medical Center, Toms River, NJ

BACKGROUND

- ❖ Inflammation plays a pivotal role in the pathogenesis in both acute and chronic heart failure.
- ❖ Recent studies showed that neutrophil-to-lymphocyte ratio (NLR) could be related to adverse outcomes in patients with cardiovascular diseases.
- ❖ To evaluate whether NLR is associated with increased mortality in patients with acute heart failure

METHODS

- ❖ Literature search in PubMed, Embase and Cochrane
- ❖ Studies comparing the outcomes between high and low NLR in ADHF patients
- ❖ In-hospital mortality, long-term all-cause mortality
- ❖ Random-effects model
- ❖ Hazard ratio/Odds ratio (HR/OR) with 95% confidence intervals (CI).

RESULTS

- ❖ 9 studies with 10,154 patients with acute heart failure
- ❖ Follow-up period of 2.14 years
- ❖ Elevated NLR → significantly higher in-hospital mortality (HR/OR 1.77, 95% CI 1.36-2.30, $p < 0.001$).
- ❖ Elevated NLR → significantly higher long-term all-cause mortality (HR/OR 1.66, 95% CI 1.46-1.90, $p < 0.001$)
- ❖ Remained significant after sensitivity analysis via leave-one-out method
- ❖ No difference between tertile-based and cut-off based studies in subgroup analysis

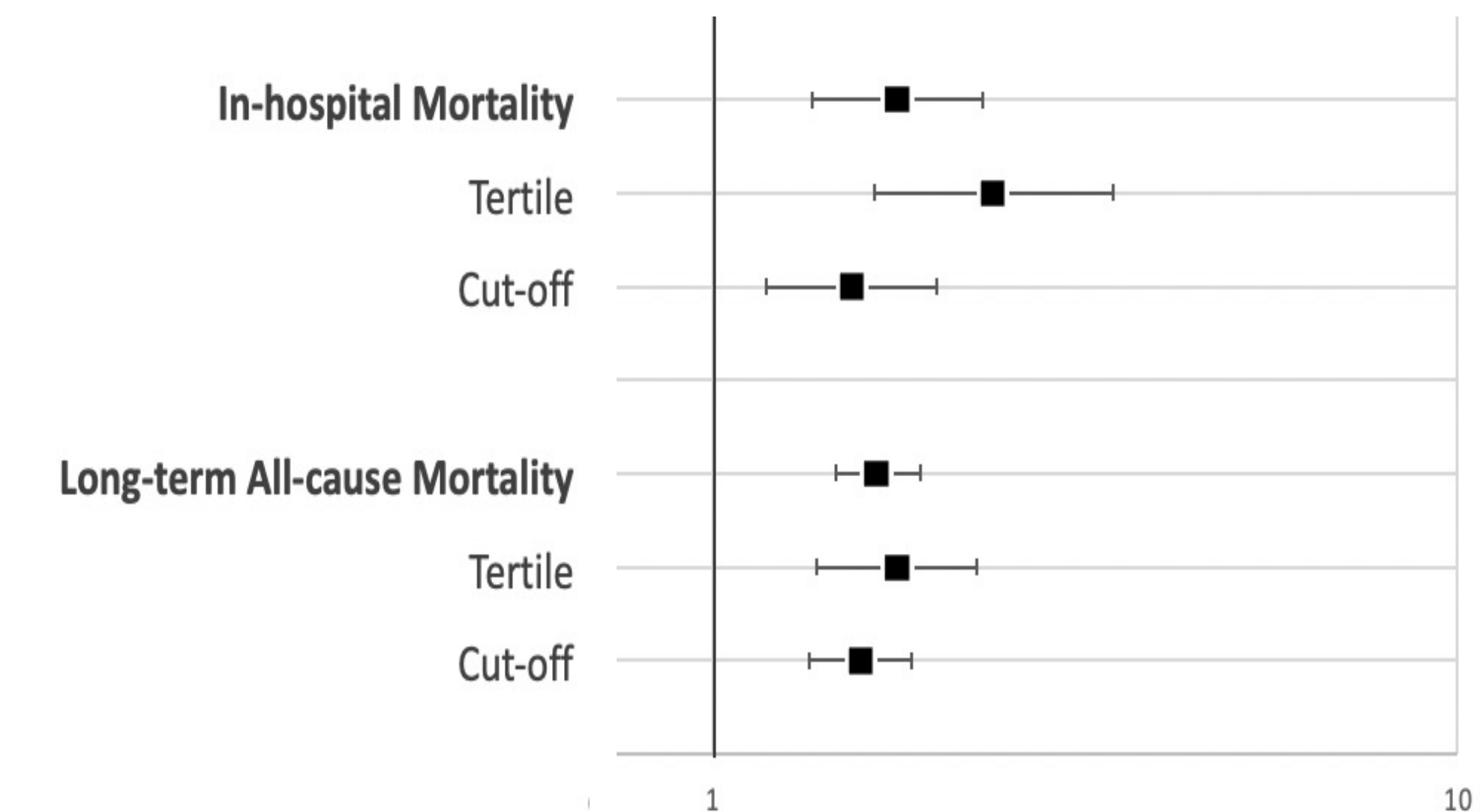
Is high NLR associated with Increased Mortality in Patients with ADHF?

HIGHLIGHTS

- ❖ Higher NLR is associated with increased short and long-term mortality in patients with ADHF
- ❖ Strength: Large sample size, Robust analysis
- ❖ Limitation: Confounding bias could not be entirely ruled out



FIGURE 1



CONCLUSION

- ❖ Elevated NLR is associated with increased short and long-term mortality in patients with ADHF.
- ❖ Results are hypothesis generating and warrant confirmation
- ❖ Further studies should explore the risk factors of mortality and evaluate whether thyroid replacement therapy could yield benefit in this group of patients.

DISCLOSURE INFORMATION

No disclosures