

The Association Between Red Cell Distribution Width and Cardiovascular Outcomes

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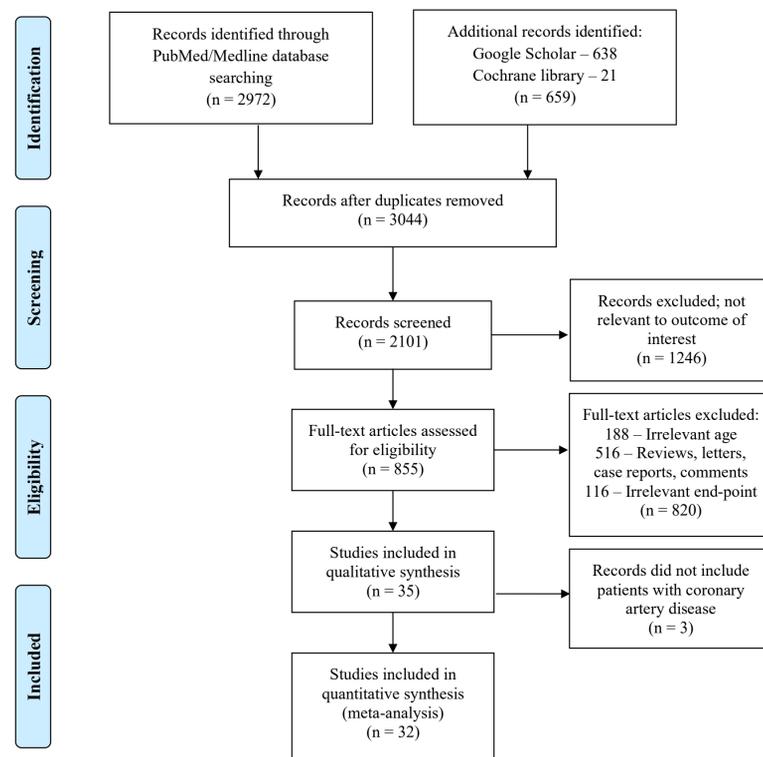
Introduction

Increased red cell distribution width (RDW) has been associated with poor prognosis in patients with heart failure (HF) and coronary heart disease (CHD) in multiple observational studies. The objective of our study is to determine the composite impact of RDW on cardiovascular outcomes in patients with HF and CHD.

Methods

Literature search of databases such as PubMed/Medline, Google Scholar, and Cochrane library was conducted from inception to 16th July, 2020 to identify all the relevant studies reporting all-cause mortality based on the RDW levels in patients with HF and CHD (ST-elevation & non-ST elevation myocardial infarction, coronary artery disease). The data was extracted from retrieved results for performing this systematic review and meta-analysis.

Figure 1. Prisma Flow Diagram for Search Strategy



Results

Figure 2. Hazard Ratio for All-Cause Mortality in HF

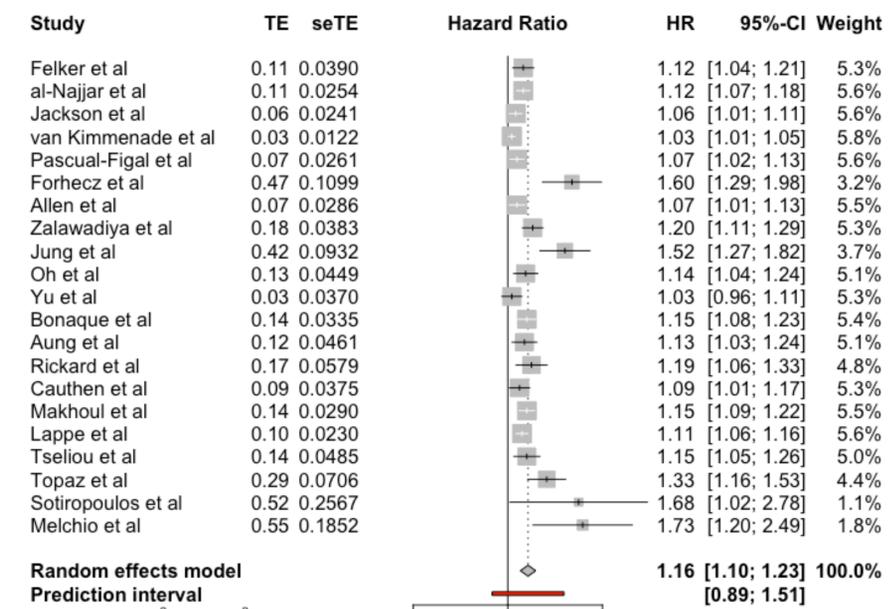
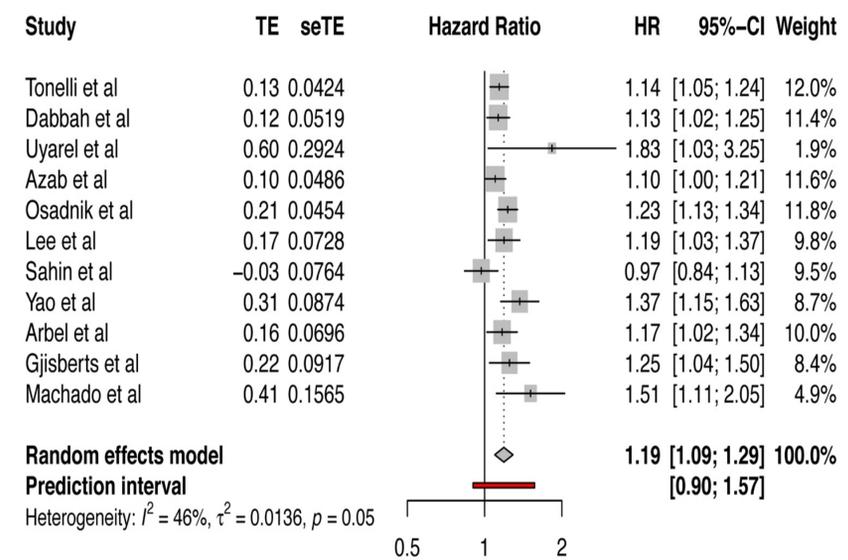
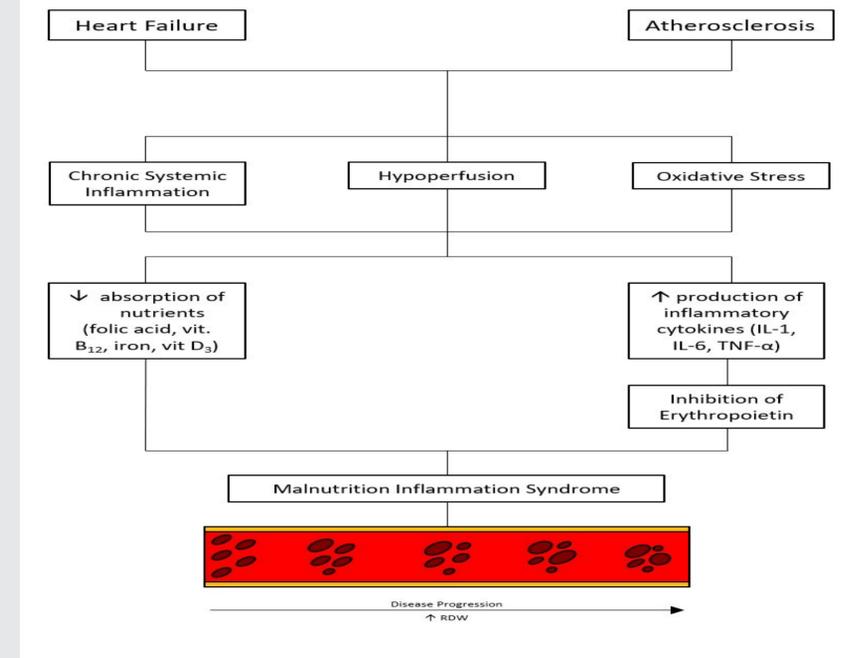


Figure 3. Hazard Ratio for All-Cause Mortality in CHD



The pooled sample size was 58,518 with an age ranging from 49–80 years and 47%–98% were male participants. We observed that the pooled estimate of hazard ratio (HR) for all-cause mortality among patients with congestive heart failure (CHF) was 1.16 (95% CI 1.10–1.23; $p < 0.001$), and the pooled HR for all-cause mortality among CHD patients was 1.19 (95% CI 1.09–1.29; $p = 0.001$) in patients with elevated RDW levels.

Figure 4. Mechanism Leading to Increased RDW in HF and CAD



Conclusion

Increased red cell distribution width (RDW) has been associated with poor prognosis in patients with heart failure (HF) and coronary heart disease (CHD) in multiple observational studies.

Disclosures

The authors have no disclosures