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*Clinical significance of preoperative neutrophil-lymphocyte ratio
and platelet-lymphocyte ratio in the prognosis of resected early-stage p
atients with non-small cell lung cancer:
A meta-analysis*

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Background

- *Poor prognosis is linked to peripheral blood levels of preoperative platelet-lymphocyte ratio (PLR) and neutrophil-lymphocyte ratio (NLR) in many advanced cancers.*
- *Nevertheless, whether the correlation exists in resected early-stage cases with non-small cell lung cancer (NSCLC) stays controversial.*
- *Consequently, we performed a meta-analysis to explore the preoperative NLR and PLR's prognostic significance in early-stage patients with NSCLC undergoing curative surgery.*

Methods

- *Relevant studies that validated the link between preoperative NLR or PLR and survival results were found via the proceeding databases: PubMed, Embase, Cochrane Library, and Web of Science.*
- *The merged 95% confidence interval (CI) and hazard ratio (HR) was employed to validate the link between the NLR or PLR's index and overall survival (OS) and disease-free survival (DFS) in resected NSCLC cases.*
- *We used sensitivity and subgroup analyses to assess the studies' heterogeneity.*

Results

Literature search and study characteristics

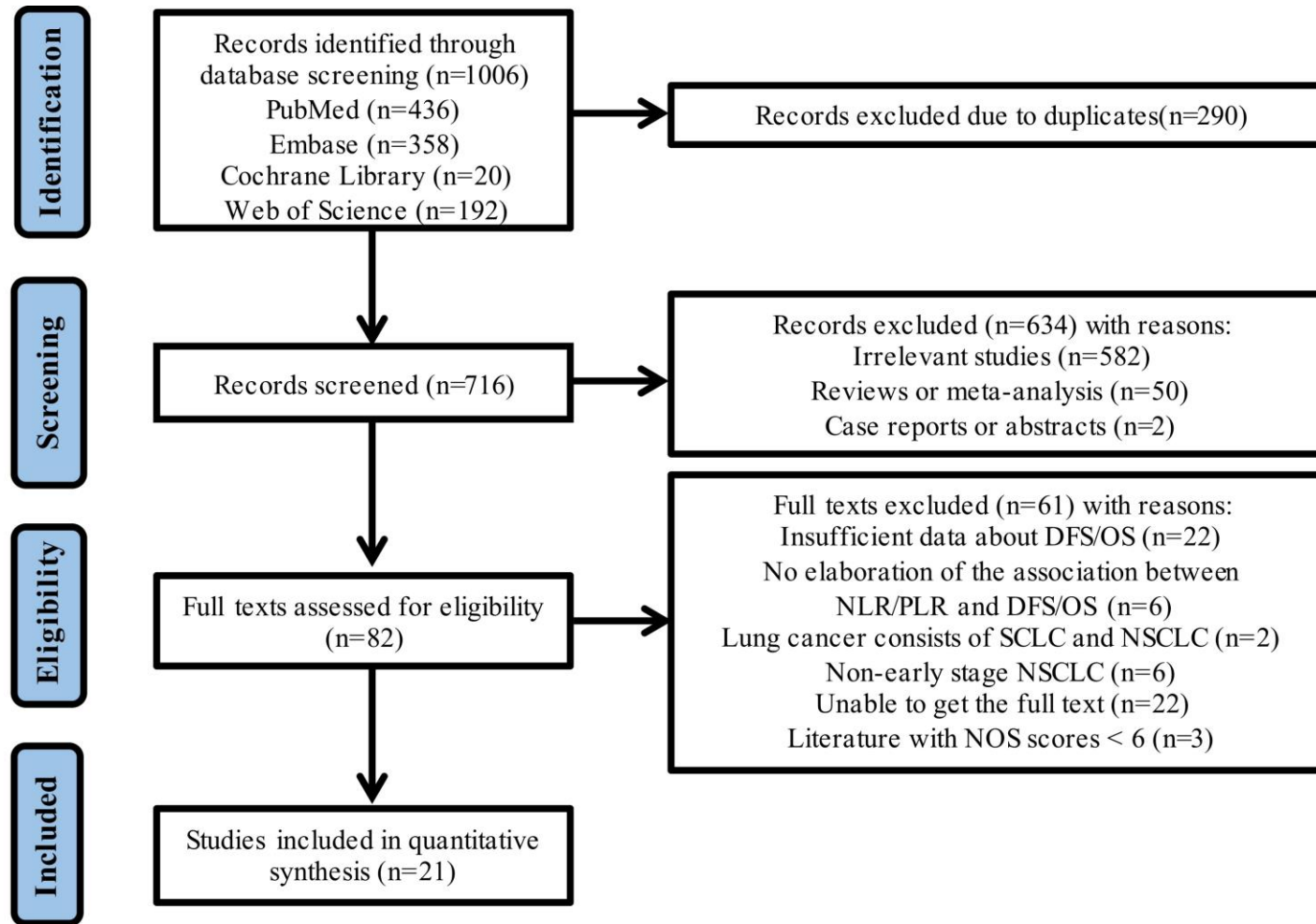


Figure 1. The flow diagram of literature selection.

Results

- *An overall of 21 studies were attributed to the meta-analysis.*
- *The findings indicated that great preoperative NLR was considerably correlated with poor DFS (HR = 1.58, 95% CI: 1.37–1.82, $P < 0.001$) and poor OS (HR = 1.51, 95% CI: 1.33–1.72, $P < 0.001$), respectively. Subgroup analyses were in line with the pooled findings.*
- *In aspect of PLR, raised PLR was indicative of inferior DFS (HR = 1.28, 95% CI: 1.04–1.58, $P = 0.021$) and OS (HR = 1.37, 95% CI: 1.18–1.60, $P < 0.001$). In the subgroup analyses between PLR and DFS, only subgroups with a sample size < 300 (HR = 1.67, 95% CI: 1.15–2.43, $P = 0.008$) and TNM staging of mixed (I-II) (HR = 1.47, 95% CI: 1.04–2.07, $P = 0.028$) showed that the link between high PLR and poor DFS was significant.*

Results

NLR's impact on DFS

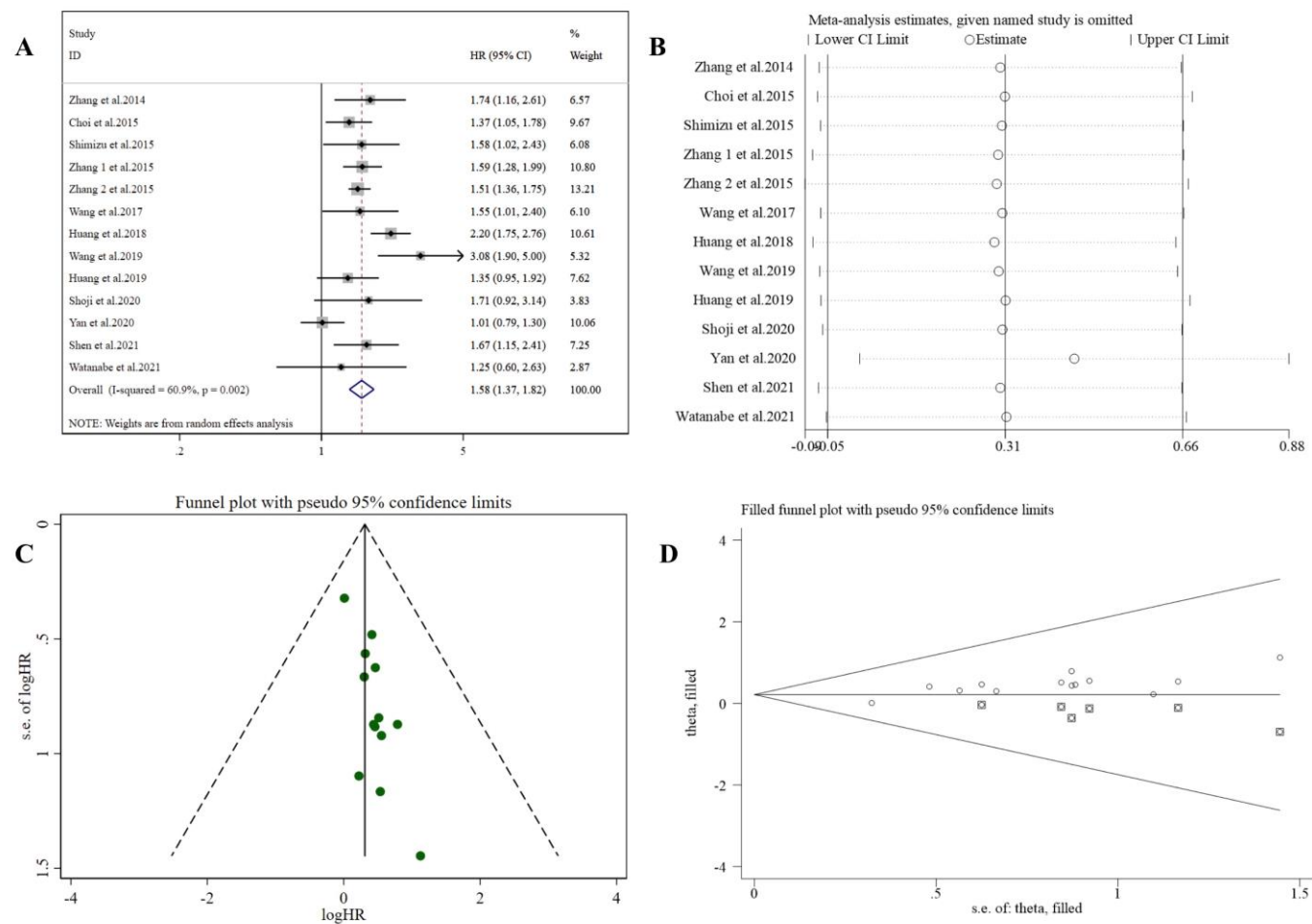


Figure 2. Pooled analyses of the association between preoperative NLR and DFS in resected early-stage NSCLC patients.

Results

NLR's impact on OS

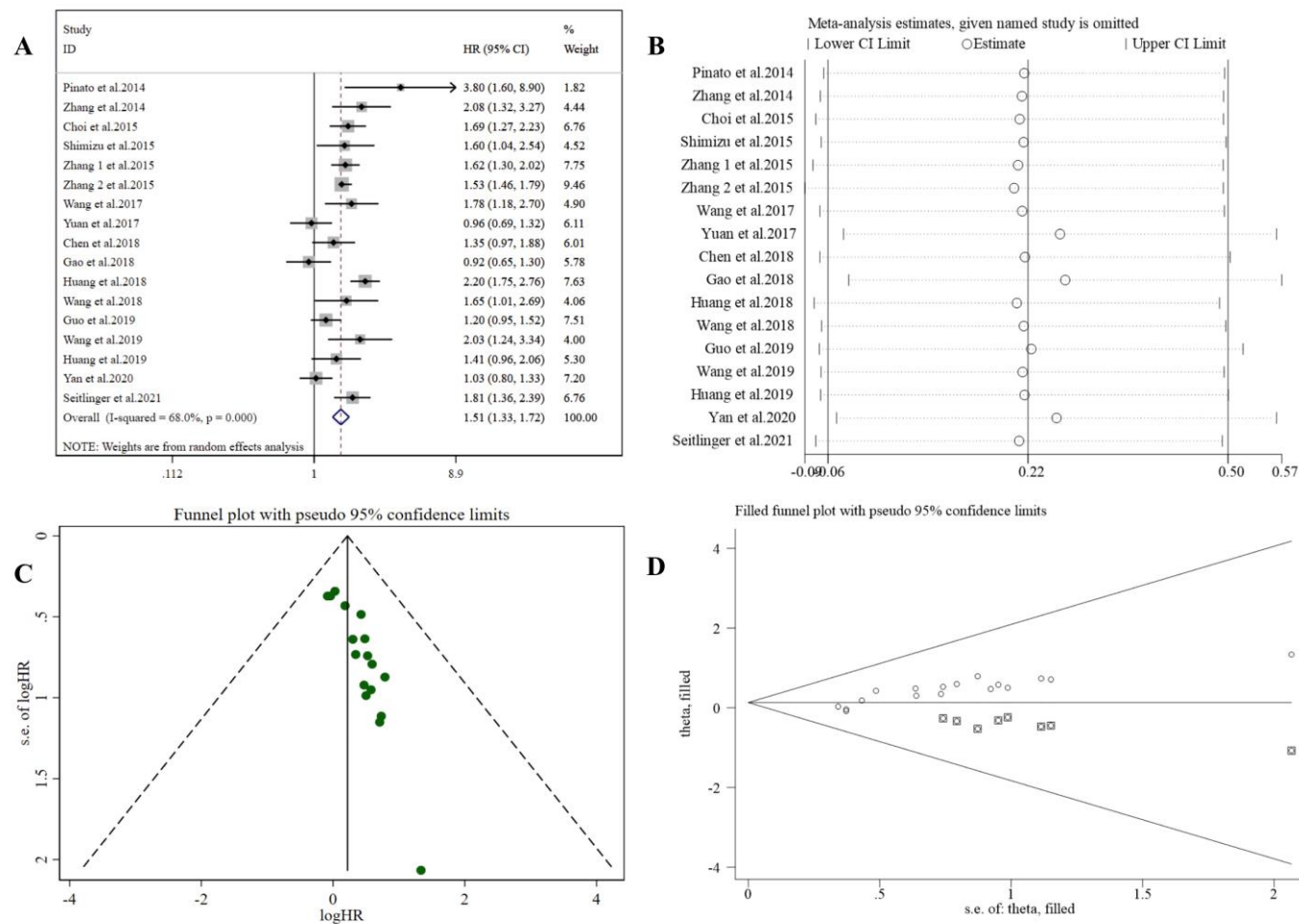


Figure 3. Pooled analyses of the correlation between preoperative NLR and OS in resected early-stage NSCLC patients.

Results

PLR's impact on DFS

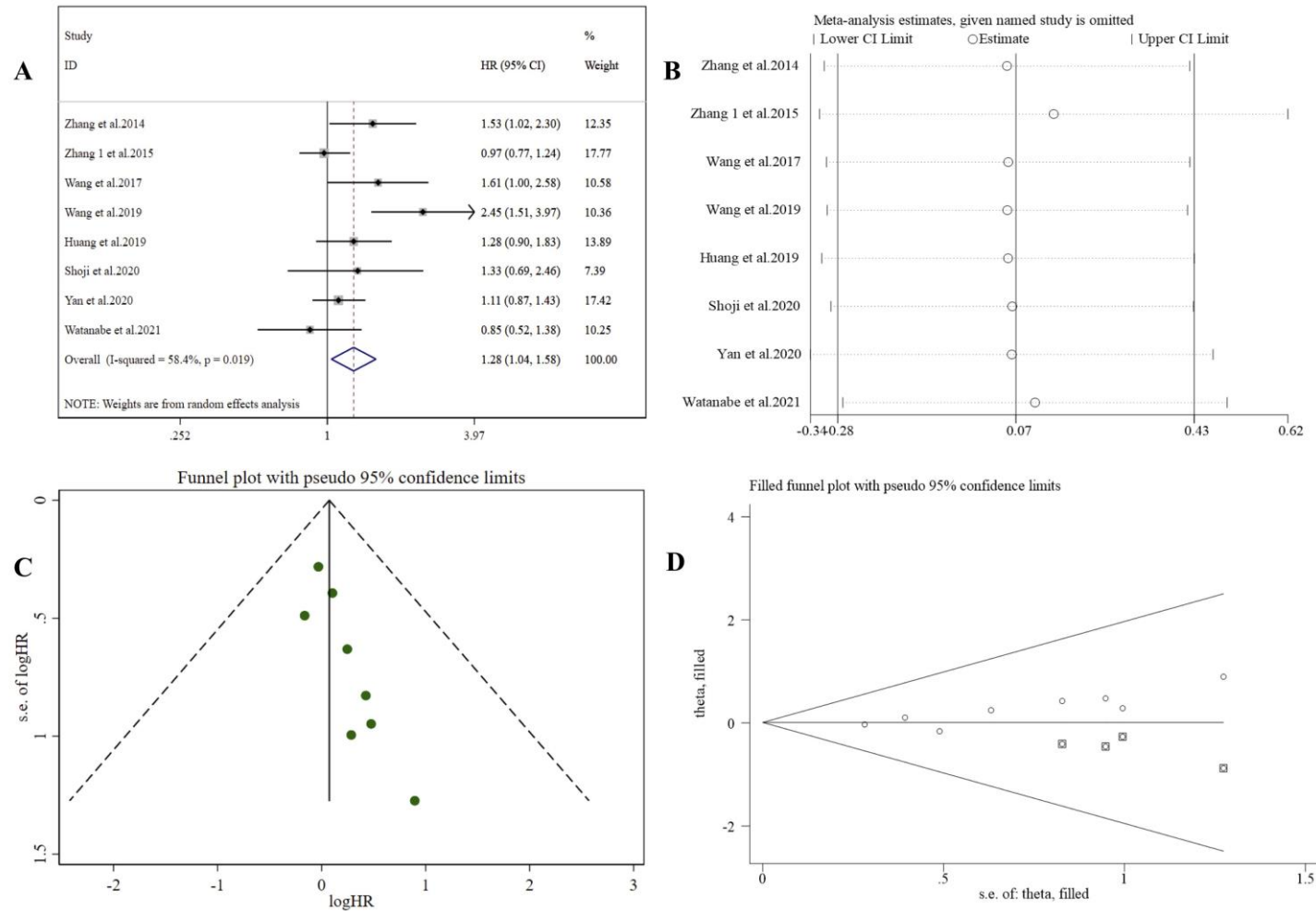


Figure 4. Pooled analyses of the relationship between preoperative PLR and DFS in resected early-stage NSCLC patients.

Results

PLR's impact on OS

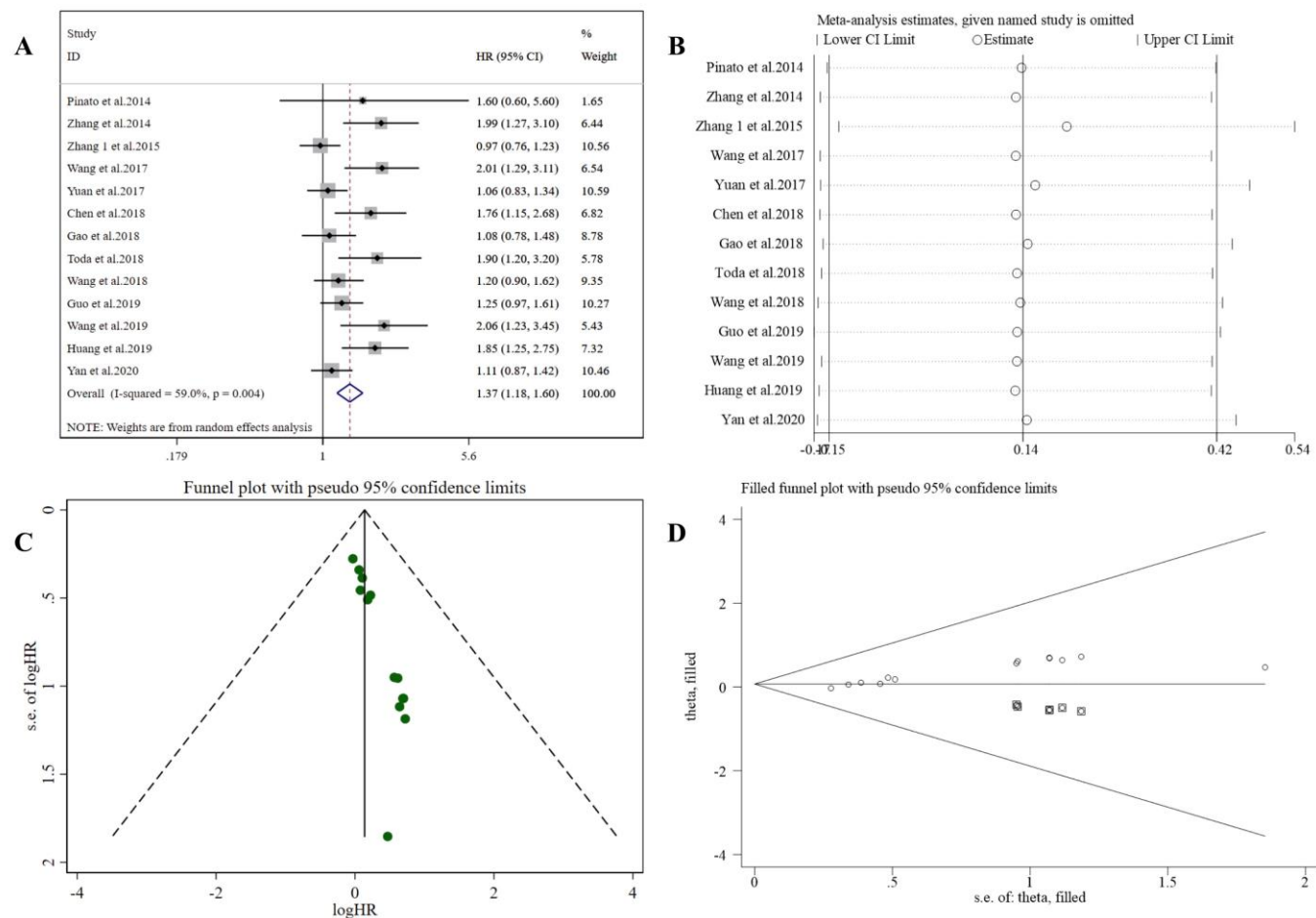


Figure 5. Pooled analyses of the link between preoperative PLR and OS in resected early-stage NSCLC patients.

Conclusion

This meta-analysis concludes that poor DFS and OS in resected early-stage cases of NSCLC are strongly correlated with preoperative peripheral blood high NLR or PLR. Preoperative elevated NLR and PLR may act as prognostic biomarkers in resected early-stage NSCLC cases and are therefore valuable for guiding postoperative adjuvant treatment.