INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Prognostic Value of Red blood cell distribution width in Patients with Acute Pulmonary Embolism: A protocol for systematic review and meta-analysis

Ye, L[1].

Review question / Objective: **P: Patients with pulmonary embolism; I: Patients with higher red blood cell distribution width level; C: Patients with lower red blood cell distribution width level; O: Severity and mortality; S: RCTs and case-control Studies.**
Condition being studied: **Previous studies suggest that red blood cell distribution width (RDW) may be used as a prognosis indicator of patients with pulmonary embolism (PE), helping determine the differential care of PE. However, there are no systematic reviews and the association between RDW and PE is still not completely understood. Therefore, we will undertake a systematic review of the literature to summarize previous evidence regarding this topic, in order to evaluate RDW relationship with mortality in patients with acute pulmonary embolism.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 March 2021 and was last updated on 12 March 2021 (registration number INPLASY202130036).

INTRODUCTION

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differential care of PE. However, there are no systematic reviews and the association between RDW and PE is still not completely understood. Therefore, we will undertake a systematic review of the literature to summarize previous evidence regarding this topic, in order to evaluate RDW relationship with mortality in patients with acute pulmonary embolism.

METHODS

Participant or population: Studies with patient age ≥18 years old, a minimum hospital stay of 24 h and a diagnosis of PE.

Intervention: Patients with higher red blood cell distribution width level.

Comparator: Patients with lower red blood cell distribution width level.

Study designs to be included: RCTs and case-control Studies.

Eligibility criteria: The inclusion criteria for the study will include: (1) studies with patient age ≥18 years old, a minimum hospital stay of 24 h and a diagnosis of PE; (2) conference abstracts were only included when they provided adequate relevant information for assessment; (3) RDW was used for the prediction of mortality of patients with PE. Exclusion criteria will include: age <18 years old, patients with carcinoma and patients with incomplete data.

Information sources: We will search the EMBASE, Web of Knowledge, PubMed, ClinicalTrials.gov and Cochrane Library from inception to September 30, 2021 to retrieve relevant studies. We will also search citations of relevant primary and review. Authors of abstract in the meeting will be further searched in PubMed for potential full articles. To minimize the risk of publication bias, we will conduct a comprehensive search that included strategies to find published and unpublished studies.

Main outcome(s): This study proved the efficiency of red blood cell distribution width in predicting the mortality of patients with PE.

Quality assessment / Risk of bias analysis: Risk of bias assessment will be carried out according to the Newcastle-Ottawa Scale (NOS) to rate the internal validity of the individual studies, and funnel plots will be constructed to assess the risk of publication bias.

Strategy of data synthesis: All pairwise meta-analytic calculations will be performed with Review Manager software (RevMan) version 5.3 (Cochrane Collaboration). Heterogeneity will be examined by computing the Q statistic and I^2 statistic, and presence of reporting bias by visual inspection of funnel plots. Statistical significance was considered when the P value <0.05.

Subgroup analysis: Patients with higher red blood cell distribution width level and Patients with lower f red blood cell distribution width level.

Sensitivity analysis: Statistical significance was considered when the P value <0.05.

Country(ies) involved: China.

Keywords: Pulmonary embolism (PE); Red blood cell distribution width (RDW); prognosis; mortality.

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