INPLASY PROTOCOL

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None declared.

A pooling analysis of the risk prediction models for mortality in acute exacerbation of chronic obstructive pulmonary disease

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Review question / Objective: **Clinical prediction models play an important role in predicting the risk of death in acute exacerbation chronic obstructive pulmonary disease (AECOPD). However, the efficacy and accuracy of these prognostic models are different, and strict review and screening are required for clinical application. We will provide information on the characteristics, performance, and risk of bias of the risk model for AECOPD mortality.**
Condition being studied: **Acute exacerbation chronic obstructive pulmonary disease(AECOPD) is defined as an acute worsening of respiratory symptoms that result in additional therapy. COPD exacerbations account for the greatest proportion of the total COPD burden on the healthcare system. Studies have shown that hospitalization for AECOPD is independently associated with death. Mortality after AECOPD ranges from 3.6% of short-term mortality(not more than 90 days) to 31% of long-term mortality(between 90 days and 2 years) and the mortality rate of patients admitted to intensive care units(ICU) is as high as 29%. Therefore, early assessment of the prognosis of patients with AECOPD and timely adjustment of treatment options can help to reduce mortality and combat negative emotions.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 April 2022 and was last updated on 26 April 2022 (registration number INPLASY202240151).

INTRODUCTION

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of bias of the risk model for AECOPD mortality.

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METHODS

Participant or population: Patients with AECOPD.

Intervention: Not applicable.

Comparator: Not applicable.

Study designs to be included: Cohort studies no matter prospective and retrospective.

Eligibility criteria: (1) Population: Patients with AECOPD; (2) Study content: Developing or validating prognostic models; (3) Outcome: Deaths included in-hospital and postdischarge deaths; (4) Study type: cohort studies no matter prospective and retrospective; (5) English language.

Information sources: PubMed, EMBASE, Cochrane Library and Web of Science databases.

Main outcome(s): Deaths included in-hospital and postdischarge deaths.

Quality assessment / Risk of bias analysis: Prediction model risk of bias assessment tool (PROBAST) was used to assess the quality of the included studies with 20 questions in four key domains: participants, predictors, outcome, and analysis. Each question was answered with "yes/probably yes", "no/probably no", and "no information" and evaluation results of each domain were judged using "low", "high" or "unclear".

Strategy of data synthesis: A random effects meta-analysis was used to synthesise calibration and discrimination statistics from multiple studies validating the same prognostic model. The meta-analysis was summarised in a forest plot showing the pooled performance.

Subgroup analysis: We plan to conduct subgroup analyses appropriate to the data retrieved.

Sensitivity analysis: Not applicable.

Country(ies) involved: China.

Keywords: prediction models; mortality; AECOPD; systematic review.

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