

INPLASY PROTOCOL

To cite: Chen et al. The diagnostic value of serum amyloid A in patients with acute exacerbation of chronic obstructive pulmonary disease: a systematic review and meta-analysis. Inplasy protocol 202240143. doi: 10.37766/inplasy2022.4.0143

Received: 24 April 2022

Published: 24 April 2022

Corresponding author:
Yuan Wang

2693855887@qq.com

Author Affiliation:
The First Affiliated Hospital of
Chengdu Medical College.

Support: CYFY2018GLPHX04.

Review Stage at time of this submission: Preliminary searches.

Conflicts of interest:
None declared.

The diagnostic value of serum amyloid A in patients with acute exacerbation of chronic obstructive pulmonary disease: a systematic review and meta-analysis

Chen, D¹; Sun, J²; Chu, YN³.

Review question / Objective: The purpose of this study was to evaluate the value of SAA in the diagnosis of AECOPD.

Information sources: Studies were obtained from the PubMed, Embase, Web of Science, Cochrane Library, Wanfang Database, CNKI, and China Biomedical Literature Database, regardless of publication time or language.

Main outcome(s): outcome measurements comprise of sensitivity, specificity, precision, accuracy, false positive rate, true positive rate, false negative rate, and diagnostic odds ratio.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 April 2022 and was last updated on 24 April 2022 (registration number INPLASY202240143).

INTRODUCTION

Review question / Objective: The purpose of this study was to evaluate the value of SAA in the diagnosis of AECOPD.

Condition being studied: SAA; AECOPD; diagnostic.

METHODS

Participant or population: All the patients who have been diagnosed with AECOPD will be included, regardless of their age, gender, or race.

Intervention: All participants received serum SAA testing.

Comparator: All the patients who have been diagnosed with COPD.

Study designs to be included: We will include case-controlled studies (CCSs) on evaluating the accuracy of SAA is accurate in the diagnosis of AECOPD.

Eligibility criteria: All the patients who have been diagnosed with AECOPD or COPD will be included, regardless of their age, gender, or race.

Information sources: Studies were obtained from the PubMed, Embase, Web of Science, Cochrane Library, Wanfang Database, CNKI, and China Biomedical Literature Database, regardless of publication time or language.

Main outcome(s): outcome measurements comprise of sensitivity, specificity, precision, accuracy, false positive rate, true positive rate, false negative rate, and diagnostic odds ratio.

Quality assessment / Risk of bias analysis: Two researchers will independently assess risk of bias for included study by a Revised tool for the Quality Assessment of Diagnostic Accuracy Studies (QUADAS-2). any doubt between researchers will be cleared up by a third researcher through consultation.

Strategy of data synthesis: We will perform data analysis using RevManV5.3 software and Stata V16.0 software. For each eligible study, we will present outcome indicators as separate binary classifiers and record specifics for dichotomization. To visualize outcome results, we will present them as descriptive statistics and 95% confidence intervals. We will carry out I² test to check heterogeneity across studies. I² 50% indicates substantial heterogeneity, and Mantel-Haenszel random-effects model will be placed. We will construct 2*2 tables to estimate reference standard and test outcome, and will estimate and conduct a descriptive forest plot and a summary receiver operating characteristic plot. If necessary, we will conduct meta-analysis based on the sufficient similarity in

characteristics of study and patient, index and reference tests, and outcome indicators. If meta-analysis is deemed not to be conducted, we will report study results by a narrative description.

Subgroup analysis: If there was high heterogeneity in the studies, we performed subgroup analysis to explore the difference in age, gender and course of disease. We used funnel plots to identify whether there was small study bias if 10 or more studies were included. The asymmetry of funnel plots suggests the possibility of small study effects, and the results of analysis were explained cautiously.

Sensitivity analysis: This study will perform a sensitivity analysis to examine the stability of study findings by excluding low quality study.

Country(ies) involved: China.

Keywords: SAA; AECOPD; diagnostic.

Contributions of each author:

Author 1 - Dan Chen.

Author 2 - Jian Sun.

Author 3 - Ya-nan Chu.