

# INPLASY

## Meta-analysis of the changes of matrix metalloproteinase-7 in the blood of patients with idiopathic pulmonary fibrosis

INPLASY202390045

doi: 10.37766/inplasy2023.9.0045

Received: 14 September 2023

Published: 14 September 2023

Muhataer, X<sup>1</sup>; Yilihamu, N<sup>2</sup>; Wang, WY<sup>3</sup>; Hou, CY<sup>4</sup>; Dilixiati, M<sup>5</sup>; Muhetaer, M<sup>6</sup>; Chen, Y<sup>7</sup>.

### Corresponding author:

Liping Chen

clp651@126.com

### Author Affiliation:

People's Hospital of Xinjiang Uygur Autonomous Region.

### ADMINISTRATIVE INFORMATION

**Support** - No financial support.

**Review Stage at time of this submission** - Preliminary searches.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202390045

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 September 2023 and was last updated on 14 September 2023.

### INTRODUCTION

**Review question / Objective** The aim of this study is to investigate whether MMP7 can be used as a biomarker of IPF.

**Rationale** PubMed, Cochrane and Embase databases were searched to collect the cases with the diagnostic value of MMP7 in IPF. RevMan5.4 and Statal6.0 software were used for Meta-analysis.

**Condition being studied** Idiopathic pulmonary fibrosis (IPF) is a progressive interstitial lung disease with poor prognosis, which is characterized by the destruction of normal lung architecture and excessive deposition of extracellular matrix in the lung. The heterogeneity of disease progression among patients with IPF poses a major barrier to patient care and hinders the effective development of novel therapeutic interventions. Blood biomarkers reflecting pulmonary pathobiological processes can provide objective evidence of underlying diseases.

### METHODS

**Participant or population** Patients with idiopathic pulmonary fibrosis, without disease duration, age, gender, disease duration, nationality, race and other restrictions. **Diagnostic criteria:** The diagnostic criteria were consistent with the diagnostic criteria for idiopathic pulmonary fibrosis in the guidelines of the American Thoracic Society/ European Respiratory Society (ATS/ERS).

**Intervention** There was no intervention group in this total review.

**Comparator** No.

**Study designs to be included** Case-control study, cohort study.

**Eligibility criteria** Research types: case-control study, cohort study; Subjects: Patients with idiopathic pulmonary fibrosis, without disease duration, age, gender, disease duration, nationality,

---

race and other restrictions. Diagnostic criteria: The diagnostic criteria were consistent with the diagnostic criteria of idiopathic pulmonary fibrosis issued by the American Thoracic Society/European Respiratory Society (ATS/ERS) guidelines.

**Information sources** PubMed, Embase and Cochrane Library were searched for studies on the correlation between serum matrix metalloproteinase (MMP) levels and idiopathic pulmonary fibrosis (IPF) related indicators published from the establishment of the database to July 2023. At the same time, the US National Library of Medicine and WHO-ICTRP databases of ongoing clinical trials were searched.

**Main outcome(s)** The extracted data included first author, publication year, region, sample size, mean age, serum MMP7 level and detection method.

**Quality assessment / Risk of bias analysis** For the QUALITY ASSESSMENT of the included STUDIES, a modified version of NEWCASTLE-OTTAWA QUALITY ASSESSMENT SCALE CASE CONTROL STUDIES (adapted on March 1, 2019) was used by two physicians. Selection of study population, comparability between groups and measurement of leak factors were analyzed. Quality assessment. In case of disagreement, discussion was performed or a third physician was invited to participate in consultation to determine the final results. Quality from low to high was scored from 0 to 9, and a NOS score  $\geq 6$  was considered high quality.

**Strategy of data synthesis** For the QUALITY ASSESSMENT of the included STUDIES, a modified version of NEWCASTLE-OTTAWA QUALITY ASSESSMENT SCALE CASE CONTROL STUDIES (adapted on March 1, 2019) was used by two physicians. Selection of study population, comparability between groups and measurement of leak factors were analyzed. Quality assessment. In case of disagreement, discussion was performed or a third physician was invited to participate in consultation to determine the final results. Quality from low to high was scored from 0 to 9, and a NOS score  $\geq 6$  was considered high quality.

**Subgroup analysis** If there was a high degree of heterogeneity in the included studies through the subcomponents. The source of heterogeneity was analyzed and the average age of the subjects will be included in the study ( $< 60$  and  $\geq 60$ ). Subgroup analysis was performed.

**Sensitivity analysis** Sensitivity analysis was used. The included studies were excluded one by one and then re-evaluated.

**Country(ies) involved** China.

**Keywords** IPF、MMP7、meta-analysis.

**Contributions of each author**

Author 1 - Xirennayi Muhataer.

Email: 1219802831@qq.com

Author 2 - Nijati Yilihamu.

Email: 383863524@qq.com

Author 3 - Wenyi Wang.

Email: 410588344@qq.com

Author 4 - Congying Hou.

Email: 1246076801@qq.com

Author 5 - Musaibaijiang Dilixiati.

Email: 78979700@qq.com

Author 6 - Maierhaba Muhetaer.

Email: 2186874426@qq.com

Author 7 - Yin Chen.

Email: 1521746909@qq.com