INPLASY

Risk Factors for Mortality in Anti-MDA5 antibody-positive Dermatomyositis with Interstitial Lung Disease: A Systematic Review and Meta-Analysis

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Yang, YH; Li, Y; Yuan, WW; Zhang, SJ; He, X; Ji, JQ.

Corresponding author:
Jiaqi Ji

18981831998@163.com

Author Affiliation:
Sichuan Provincial People's Hospital, School of Medicine, University of Electronic Science and Technology of China.

ADMINISTRATIVE INFORMATION

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Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 April 2025 and was last updated on 17 April 2025.

INTRODUCTION

Review question / Objective This study aimed to explore the risk factors for mortality in patients with MDA5+ DM-ILD.

Condition being studied In Web of Science, PubMed, Embase and Scopus databases, a comprehensive search was performed for English studies on MDA5+, DM and ILD published from inception date until November 18, 2025.

METHODS

Participant or population 1153 Anti-melanoma differentiation-associated gene 5 antibody-positive dermatomyositis with interstitial lung disease (MDA5+ DM-ILD) patients.

Intervention NonSurvival MDA5+ DM-ILD patients group.

Comparator Survival MDA5+ DM-ILD patients group.

Study designs to be included Retrospective.

Eligibility criteria The criteria for inclusion were as follows: (1) prospective or retrospective studies; (2) diagnosis of DM was based on the IIM classification criteria of the European League Against Rheumatism/American College of Rheumatology (EULAR/ACR) or Bohan and Peter's diagnostic criteria ; (3) diagnosis of ILD was based on established clinical guidelines , incorporating respiratory symptoms, physical examination findings, abnormalities on high-resolution computed tomography (HRCT), and pulmonary function test results through multidisciplinary evaluation; (4) hazard ratios (HR) and 95% confidence intervals of mortality risk factors in MDA5+ DM-ILD were obtained by Cox

proportional hazards regression model; (5) English literature.
The criteria for exclusion were as follows: (1) duplicate literature; (2) case report, conference abstract, review or meta-analysis, animal or cell study, comment or letter etc.; (3) studies not related to MDA5+ DM-ILD. (4) mortality of MDA5+ DM-ILD is not the outcome event; (5) inability to extract data; (6) literature not in English.

Information sources A comprehensive search of English language literature published in PubMed, Embase, Web of science, and Scopus databases prior to November 18, 2025 was performed.

Main outcome(s) Risk factors for mortality.

Quality assessment / Risk of bias analysis The Newcastle-Ottawa Scale (NOS) was applied for the quality of the included literatures.

Strategy of data synthesis HR and 95% CI of risk factors were collected as statistical effect sizes, and Cochran's Q statistic and inconsistency value (I2) was used to test for heterogeneity of the included studies. If $P < 0.05$ and $I2 \geq 50\%$, heterogeneity was significant, and pooled analyses were performed using random effects model and Der Simonian-Laird (DL) method. Otherwise, fixed effects model and inverse variance (IV) method were used.

Subgroup analysis Subgroup analyses were executed for different risk factors.

Sensitivity analysis Excluding one category of study at a time method was utilized for sensitivity analysis.

Country(ies) involved China.

Keywords Anti-melanoma differentiation-associated protein 5; dermatomyositis; interstitial lung disease; mortality; poor prognosis.

Contributions of each author
Author 1 - Yahui Yang.
Author 2 - Ying Li.
Author 3 - Weiwei Yuan.
Author 4 - Shijie Zhang.
Author 5 - Xing He.
Author 6 - Jiaqi Ji.