INPLASY

Prognostic and clinicopathological effects of prognostic nutritional index (PNI) in patients with multiple myeloma: a meta-analysis

INPLASY202580046

doi: 10.37766/inplasy2025.8.0046

Received: 14 August 2025

Published: 14 August 2025

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202580046

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 August 2025 and was last updated on 21 September 2025.

INTRODUCTION

Review question / Objective Many studies have explored the prognostic effect of prognostic nutritional index (PNI) in patients with multiple myeloma (MM), whereas the results were controversial. This study aimed to identify the accurate prognostic role of PNI in MM through meta-analysis.

Condition being studied The electronic databases of PubMed, Web of Science, Embase, Cochrane Library, and CNKI were thoroughly searched.

METHODS

Participant or population Patients with MM.

Intervention Studies investigated the association between PNI and survival outcomes of MM.

Comparator Patients with normal level of PNI.

Study designs to be included Cohort studies.

Eligibility criteria The inclusion criteria were as follows: (1) the diagnosis of MM was pathologically confirmed; (2) studies investigated the association between PNI and survival outcomes of MM; (3) the hazard ratios (HRs) and 95% confidence intervals (CIs) are provided or are calculable; (4) a cut-off value of PNI was identified; and (5) studies published in any language.

Information sources PubMed, Web of Science, Embase, Cochrane Library, and CNKI.

Main outcome(s) OS and PFS.

Quality assessment / Risk of bias analysis The Newcastle-Ottawa Quality Assessment Scale (NOS) was used to assess the quality of the included studies.

Strategy of data synthesis The combined HRs and 95%CIs were calculated to evaluate the prognostic value of PNI for OS and PFS in MM.

Subgroup analysis Subgroup analyses were conducted.

Sensitivity analysis The stability and robustness of the results were assessed through a sensitivity analysis.

Language restriction No language restrictions were imposed.

Country(ies) involved China.

Keywords prognostic nutritional index; multiple myeloma; meta-analysis; prognosis; biomarker.

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