

# INPLASY PROTOCOL

To cite: Li et al. Prognostic role of Geriatric Nutritional Risk Index (GNRI) in patients with pancreatic cancer: a meta-analysis. Inplasy protocol 202340013. doi: 10.37766/inplasy2023.4.0013

Received: 05 April 2023

Published: 05 April 2023

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**Support:** None.

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

**Conflicts of interest:**  
None declared.

## INTRODUCTION

**Review question / Objective:** In assessing the prognosis of patients with pancreatic cancer, the Geriatric Nutritional Risk Index (GNRI) remains controversial. Therefore, a meta-analysis was conducted to evaluate the association between GNRI and prognosis in pancreatic cancer.

## Prognostic role of Geriatric Nutritional Risk Index (GNRI) in patients with pancreatic cancer: a meta-analysis

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**Review question / Objective:** In assessing the prognosis of patients with pancreatic cancer, the Geriatric Nutritional Risk Index (GNRI) remains controversial. Therefore, a meta-analysis was conducted to evaluate the association between GNRI and prognosis in pancreatic cancer.

**Eligibility criteria:** Studies eligible for inclusion met the following criteria: (1) it was confirmed pathologically that the patient had primary pancreatic cancer; (2) GNRI was measured pretreatment; (3) patients were divided into low and high GNRI groups based on a cut-off value; (4) survival outcomes were summarized by hazard ratios (HRs) and 95% confidence intervals (CIs); (5) research published in English.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 April 2023 and was last updated on 05 April 2023 (registration number INPLASY202340013).

**Condition being studied:** Several electronic databases, including PubMed, Embase, Cochrane Library, and Web of Science, were thoroughly searched. A pooled analysis of hazard ratios (HRs) and 95% confidence intervals (CIs) of GNRI for survival in pancreatic cancer was performed. By using combined odds ratios (ORs) and 95% confidence intervals (CIs), we investigated the association between GNRI and clinicopathological characteristics of pancreatic cancer.

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## METHODS

**Search strategy:** The searching items were: (geriatric nutritional risk index OR GNRI) AND (pancreatic cancer OR pancreatic carcinoma OR pancreatic neoplasms OR pancreatic ductal adenocarcinoma OR pancreas cancer). Retrieval was conducted using both free words and Medical Subject Headings (MeSH) terms.

**Participant or population:** Patients were confirmed pathologically had primary pancreatic cancer.

**Intervention:** GNRI was measured pretreatment and patients were divided into low and high GNRI groups based on a cut-off value.

**Comparator:** All control patients with pancreatic cancer were defined with high GNRI.

**Study designs to be included:** Cohort studies, including prospective and retrospective cohorts published in English.

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**Information sources:** Several electronic databases, including PubMed, Embase, Cochrane Library, and Web of Science, were thoroughly searched. The search was updated until October 18, 2022. The study language was restricted to English. A manual review of the references of the relevant original and review articles was also conducted to identify potential related studies.

**Main outcome(s):** Overall survival (OS) and progression-free survival (PFS) were the

primary and secondary outcomes, respectively.

**Quality assessment / Risk of bias analysis:** Using the Newcastle-Ottawa Scale (NOS), the methodological quality of the included studies was assessed. There are three aspects to the NOS that evaluate quality: quality of selection, comparability, and patient outcomes. There is a range of NOS scores from 0 to 9. Studies with a NOS score  $\geq 6$  are considered high-quality studies. The funnel plot and Begg's test were used to assess publication bias.

**Strategy of data synthesis:** By pooling HRs and 95% CIs, we evaluated the prognostic value of GNRI in pancreatic cancer. The heterogeneity across studies was measured by using chi-squared test based on the Q statistic and I<sup>2</sup> statistic. In the case of significant heterogeneity (P 50%), random-effects models were used. In the absence of significant heterogeneity, fixed-effects models were used. Subgroup analysis was conducted according to various factors to further detect the prognostic role of GNRI in different populations. Combining odds ratios (ORs) and 95% confidence intervals (CIs) were used to examine the association between GNRI and pancreatic cancer clinicopathological characteristics.

**Subgroup analysis:** Subgroup analysis was conducted according to various factors to further detect the prognostic role of GNRI in different populations.

**Sensitivity analysis:** Sensitivity analysis was used to examine the stability of the results.

**Language restriction:** English.

**Country(ies) involved:** China.

**Keywords:** GNRI; pancreatic cancer; meta-analysis; prognosis; cancer prevention.

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