

INPLASY PROTOCOL

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None.

Prognostic Impact of the Pre-treatment Controlling Nutritional Status Score in Patients with Non-small Cell Lung Cancer: A Meta-Analysis

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Review question / Objective: The influence of pre-treatment Controlling Nutritional Status (CONUT) score on the prognosis of non-small cell lung cancer (NSCLC) patients is inconclusive. We performed this meta-analysis to evaluate the prognostic significance of CONUT score in NSCLC patients.

Condition being studied: Lung cancer, the most common type of cancer, represents the leading cause of death from cancer for men and the second leading cause of cancer mortality for women globally. According to global cancer statistics, there is an estimated 1.8 million new cases of lung cancer annually, with lung cancer associated mortality expected to exceed one million on an annual basis. Approximately 85% of all lung cancers are non-small cell lung cancer (NSCLC). Despite the tremendous progress made in the diagnosis, staging, and treatment of the NSCLC, the 5-year overall survival (OS) has not increased significantly over the past two decades, remaining below 15%. The inadequate specificity and sensitivity of these parameters render them somewhat cumbersome to integrate into clinical practice. Consequently, it is imperative to identify new effective prognostic biomarkers to predict the treatment response or long-term survival of NSCLC patients.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 December 2020 and was last updated on 23 December 2020 (registration number INPLASY2020120112).

INTRODUCTION

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METHODS

Participant or population: Patients were histopathologically diagnosed with non-small cell lung cancer.

Intervention: High CONUT score.

Comparator: Patients with low CONUT score were controls.

Study designs to be included: Retrospective cohort study

Eligibility criteria: (a) Included patients with NSCLC diagnosed through histopathology; (b) Reported the hazard ratio (HR) and 95% confidence intervals (CI) for the overall survival (OS) or disease-free survival (DFS) or recurrence-free survival (RFS) or cancer-specific survival (CSS); or included sufficient data to calculate the HR and 95% CI; (c) Published in English.

Information sources: PubMed, Embase, and Cochrane Library databases.

Main outcome(s): The hazard ratio (HR) and 95% confidence interval (CI) were extracted to assess the correlation between the CONUT score and the overall survival (OS).

Quality assessment / Risk of bias analysis: Assessment of study quality was independently performed for all the primary studies by three investigators using the Newcastle–Ottawa Quality Assessment Scale (NOS). The Begg's test and a funnel plot were implemented for the detection of any potential publication bias.

Strategy of data synthesis: The HR and 95% CI were retrieved directly from the included studies or calculated. In order to establish an estimate of the overall HR with a 95% CI, the HR from the multivariate or univariate analysis was extracted from each study. Subsequently, the statistical heterogeneity of pooled results was assessed using the Cochran's Q test and I² statistical methods. Our results were reckoned to have been unaffected by heterogeneity if I² < 50% or p > 0.10. In this scenario, a fixed-effects model was utilized to obtain the pooled estimates; otherwise, a random-effects model was used.

Subgroup analysis: Additional subgroup analysis was carried out based on the treatment methods, cancer stage, CONUT cut off values, sample size, and analysis methods of HR.

Sensibility analysis: A sensitivity analysis was performed by sequentially excluding each study to assess the impact of each included study on the final pooled results.

Country(ies) involved: China.

Keywords: CONUT score; non-small cell lung cancer; meta-analysis; prognosis.

Contributions of each author:

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Author 4 - Yunxia Cao.