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INPLASY

Evaluation of Immune Checkpoint Inhibitors for Colorectal Cancer: A Protocol for a Network Meta-Analysis

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ADMINISTRATIVE INFORMATION

Support - TSUM.

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

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 2024 and was last updated on 17 April 2024.

INTRODUCTION

Review question / Objective The objective of this network meta-analysis is to evaluate the relative effectiveness and safety of various immune checkpoint inhibitors (ICIs) for the treatment of colorectal cancer (CRC), with a focus on overall survival, progression-free survival, objective response rates, and incidence of severe adverse events.

Rationale CRC is the third most commonly diagnosed cancer worldwide and presents significant treatment challenges due to its high metastasis rate at diagnosis. While ICIs have shown promise in other cancers, their efficacy in CRC remains inconsistently reported. This meta-analysis aims to synthesize available RCT data to provide clearer insights into which ICIs are most effective and safe for treating CRC.

Condition being studied The PICO (population, intervention, comparison, and outcome) settings for this meta-analysis includes: Population: Adults diagnosed with CRC. Intervention: Treatment with ICIs. Comparator: Placebo, or active controls. Outcomes: Overall survival, progression-free survival, objective response rates, and severe adverse events (grade 3 or higher).

METHODS

Search strategy A comprehensive literature search will be conducted in multiple electronic databases including PubMed, Cochrane Library, Embase, ClinicalTrials.gov, and Web of Science. The search will cover studies published from the inception of these databases until April 2023, using the following keywords: "colorectal cancer", "immune checkpoint inhibitors", "PD-1", "PD-L1", "CTLA-4", and related terms. The search is conducted independently by two authors.

Participant or population Human participants with a diagnosis of CRC.

Intervention Regimen with or without ICI.

Comparator Active comparator as defined by each trial.

Study designs to be included Randomized controlled trials (RCTs).

Eligibility criteria (1) RCTs investigating the efficacy and safety of ICIs in patients with CRC. (2) Studies reporting on at least one of the specified outcomes. (3) Exclusion criteria include non-RCTs, studies not reporting relevant outcomes, and studies with incomplete data.

Information sources Primary sources of literature will be electronic databases such as PubMed, Embase, Cochrane Library, ClinicalTrials.gov, and Web of Science. Secondary sources will include reference lists of included studies and relevant review articles.

Main outcome(s) The primary outcomes will be overall survival and progression-free survival. Secondary outcomes will include objective response rates and the incidence of severe adverse events.

Data management Data will be extracted independently by two reviewers using a standardized data extraction form. Discrepancies will be resolved through discussion or consultation with a third reviewer.

Quality assessment / Risk of bias analysis The quality of included studies will be assessed using the Cochrane Collaboration's tool for assessing risk of bias in randomized trials. This assessment will cover domains such as random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other biases.

Strategy of data synthesis Data will be synthesized using a random-effects model due to the expected heterogeneity among studies. A network meta-analysis will be performed to compare the effectiveness and safety of different ICIs directly and indirectly using Metainsight software provided by Cochrane. Heterogeneity test is performed by the built-in application from the Metainsight software.

Subgroup analysis Not applicable.

Sensitivity analysis Not applicable.

Language restriction No limitation of languages.

Country(ies) involved Taiwan.

Keywords colorectal neoplasm, immune checkpoint inhibitor, malignancy, oncology, survival.

Contributions of each author

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