INPLASY

Treatment-related adverse events of antibody-drug conjugates (ADCs) in non-small cell lung cancer (NSCLC): A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - No available.

Review Stage at time of this submission - Preliminary searches.

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 11 December 2023 and was last updated on 11 December 2023.

INTRODUCTION

Review question / Objective Recently, antibody-drug conjugates (ADCs) that combine monoclonal antibodies with the cytotoxic effects of chemotherapy are rapidly becoming a highly effective strategy for treating non-small-cell lung cancer, and more and more people are becoming eligible to use them. But their safety remains debatable. In NSCLC, we included RCTs that compared ADC monotherapy to chemotherapy strategy and single-arm studies. The researchers looked at all-grade adverse events, high-grade adverse events, serious adverse events, adverse events that resulted in drug discontinuation, and fatal adverse events. The goal of this study is to assess the safety of all currently available ADC monotherapy in patients with NSCLC.

Condition being studied We investigate the adverse events of ADC monotherapy for non-small-cell lung cancer. The electronic databases, namely, PubMed, Embase, Cochrane Library, and ClinicalTrials.gov databases, were systematically searched for relevant literature until December 1st,2023. To include the updated outcomes, we also explored online proceedings and abstracts from annual conferences.

METHODS

Participant or population Patients with NSCLC confirmed by either histologically or cytologically (Data results for ADC drugs targeting solid tumors were not included).

Intervention ADC monotherapy.

Comparator Chemotherapy or other treatments or no comparator.

Study designs to be included Prospective clinical trials.

Eligibility criteria The inclusion criteria were as follows: (1) prospective clinical trials; (2) participants who received monotherapy with ADCs; (3) patients with non-small-cell lung cancer; (4) marketed ADCs; (5) available safety profiles reported on ClinicalTrials.gov with no relevant publications; and (6) available count data regarding treatment-related adverse events. To allow for comparability between trials, only trials in which adverse events were reported based on the CTCAE guideline were included. The exclusion criteria were as follows: (1) retrospective studies, case reports, meta-analyses, or reviews; (2) studies with ambiguous clinical outcomes, incomplete adverse event data and in which the number of patients in the ADC monotherapy group was less than ten; (3) duplicate studies; and (4) data results for ADC drugs targeting solid tumors.

Information sources The electronic databases, namely, PubMed, Embase, Cochrane Library and ClinicalTrials.gov databases were systematically searched for relevant literatures conducted until December 1st,2023. To include the updated outcomes, we also explored online proceedings and abstracts from annual conferences.

Main outcome(s) Incidences of all-grade adverse events, high-grade adverse events, serious adverse events, adverse events that resulted in drug discontinuation, and fatal adverse events. (The total number of patients who received ADCs treatment, and the numbers of patients who reported at least one adverse event, including all-grade adverse events, high-grade adverse events, serious adverse events, adverse events that resulted in drug discontinuation, and fatal adverse events, were also extracted for the calculation of incidences. All severity of adverse events was graded on the basis of the CTCAE definitions. High-grade adverse events are defined as grade 3 or higher (grade ≥3). Serious adverse events are defined as any adverse events that: result in death; require hospitalization or prolonged hospitalization; are life-threatening; result in a persistent or significant disability/incapacity. Fatal adverse events are grade-5 adverse events resulting in death.) There be also the incidence of specific and non-specific adverse events of ADCs. (Later may be due to specific circumstances to increase or decrease.)

Quality assessment / Risk of bias analysis We will assess potential risks of bias of the included trials using the Cochrane risk-of bias tool. Quality assessment consisted of random-sequence generation (selection bias), allocation concealment (selection bias), blinding of participants and Personnel (performance bias), blinding of outcome assessment (detection bias), incomplete outcome data (attrition bias), selective report (reporting bias), and other biases. Included studies will be categorized into three grades: low risk of bias (+), high risk of bias (–), and unclear (?). The quality assessment will be conducted by two independent investigators, and any discrepancy among investigators will be resolved by consensus.

Strategy of data synthesis Strategy of data synthesis: Statistical analyses were executed using R software and R Studio software. If the P value for $x2 > 0.1$ and was $I2<50\%$, a fixed-effects model would be used to count the pooled estimate. Otherwise, a random effects model would be selected to combine the studies.

Subgroup analysis Treatment-related adverse events of different targets and different payloads, and so on. (Whether it can be analyzed depends on the final extracted data.)

Sensitivity analysis Sensitivity analysis is executed using R software and R Studio software.

Country(ies) involved China.

Keywords adverse events, antibody-drug conjugates (ADCs), non-small cell lung cancer (NSCLC), meta-analysis.

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