INPLASY

# Bevacizumab plus Epidermal Growth Factor Receptor (EGFR)-Tyrosine Kinase Inhibitor versus EGFR-TKI alone for advanced EGFR-mutant non-small cell lung cancer: a meta-analysis of randomized clinical trials

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## ADMINISTRATIVE INFORMATION

**Support -** QN RC2016363.

**Review Stage at time of this submission -** Preliminary searches.

**Conflicts of interest -** None declared.

**INPLASY registration number:** INPLASY2023120059

**Amendments -** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 December 2023 and was last updated on 13 December 2023.

## INTRODUCTION

**Review question / Objective** The objective of this systematic review and meta-analysis was to assess and contrast the efficacy and safety of combining Epidermal Growth Factor Receptor (EGFR)-Tyrosine Kinase Inhibitor plus bevacizumab with EGFR-TKI alone in the treatment of patients with advanced non-small cell lung cancer (NSCLC).

**Condition being studied** We searched all the eligible studies of Epidermal Growth Factor Receptor (EGFR)-Tyrosine Kinase Inhibitor plus bevacizumab versus control group without bevacizumab in the treatment of advanced non-small cell lung cancer (NSCLC), which were retrieved from CNKI,Wanfang database, CBM, VIP, PubMed, EMBase, Cochrane Trials databases, Web of Science.Quality evaluation was assessed by the Cochrane Collaboration's tool for randomized controlled trials and methodological index(MINORS) for non-randomized trials. Meta-analysis was con-ducted by RevMan5.3 soft ware after date extraction.

## METHODS

**Participant or population** Patients diagnosed with EGFR mutation-positive non-small-cell lung cancer by histopathology and cytology.

**Intervention** Epidermal Growth Factor Receptor (EGFR)-Tyrosine Kinase Inhibitor plus bevacizumab.

**Comparator** Epidermal Growth Factor Receptor (EGFR)-Tyrosine Kinase Inhibitor alone.

**Study designs to be included** Clinical trials (RCT).

**Eligibility criteria** Diagnosed with EGFR mutation-positive non-small-cell lung cancer.

**Information sources** CNKI,Wanfang database, CBM, VIP, PubMed, EMBase, Cochrane Trials databases, Web of Science.

**Main outcome(s)** Progression-free survival (PFS), Complete response rate(CR), Objective response rate(ORR), Disease control rate(DCR), Survival rates, adverse reactions rate.

**Quality assessment / Risk of bias analysis** Two reviewers will independently assess the quality of the included studies.The Cochrane Collaboration's tool was for randomized controlled trials. Items will be evaluated in three categories: Low risk of bias, unclear bias and high risk of bias. The following characteristics will be evaluated: Random sequence generation (selection Bias) Allocation concealment (selection bias) Blinding of participants and personnel (performance bias) Incomplete outcome data (attrition bias) Selective reporting (reporting bias) Other biases.Results from these questions will be graphed and assessed using Review Manager 5.3.The methodological index(MINORS) was for non-randomized trials, Mainly from the following aspects of evaluation:The purpose of the study is clearly given. Patient coherence was included. Expected data collection.T8he end points appropriately reflect the purpose of the study. Objective evaluation of end points. Adequate follow-up time. The loss to follow-up was less than 5%. Was the sample size estimated.

**Strategy of data synthesis** All meta analyses were performed using Cochrane RevMan version 5.3 and Stata (version 16). The results were reported as pooled odds ratios (ORs) with 95% confidence intervals (95%CIs). We used Cochrane's Q test and I2 statistics to evaluate the heterogeneity of all the studies. If the heterogeneity was significant (p 50.0%), the random effects model was adopted; otherwise, the fixed effects model was used. Potential publication bias was assessed using funnel plots, Egger's test, and Begg's test. Results of this meta-analysis were presented by forest plots, and the p value less than 0.05 was considered significant. Publication bias was evaluated though funnel plots.

**Subgroup analysis** When we analyze the results, we can decide whether to do a subgroup analysis based on that factor.

**Sensitivity analysis** The sensitivity analysis was carried out by Stata software, and the sensitivity of the article was reflected by the change of effect size after deleting one of the articles.

**Language restriction** English and Chinese language.

**Country(ies) involved** China.

**Keywords** EGFR, Tyrosine Kinase Inhibitor, NSCLC, bevacizumab.

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