

Efficacy and Safety of Bevacizumab Plus Chemotherapy Versus Chemotherapy Alone in the Treatment of Non-Small Cell Lung Cancer (NSCLC) in Asian Patients: a Systematic Review and Meta-analysis

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INTRODUCTION

- Lung cancer is the leading cause of cancer-related death worldwide.¹
- Lung cancer is responsible for approximately 1.2 million deaths annually across the globe.¹
- More than 80% of lung cancer cases are of non-small cell cancer (NSCLC).¹
- Approximately 51% of patients present with advanced disease at diagnosis.¹
- The standard-of-care in patients with advanced NSCLC is platinum-based doublet chemotherapy.²
- The addition of a third cytotoxic agent increases toxicity and does not provide for additional clinical benefit.²
- VEGF (Vascular endothelial growth factor) is responsible for growth of NSCLC.
- Bevacizumab is a monoclonal antibody against VEGF.

OBJECTIVE

To evaluate the efficacy and safety of bevacizumab plus chemotherapy versus chemotherapy alone for the treatment of NSCLC in Asian patients.

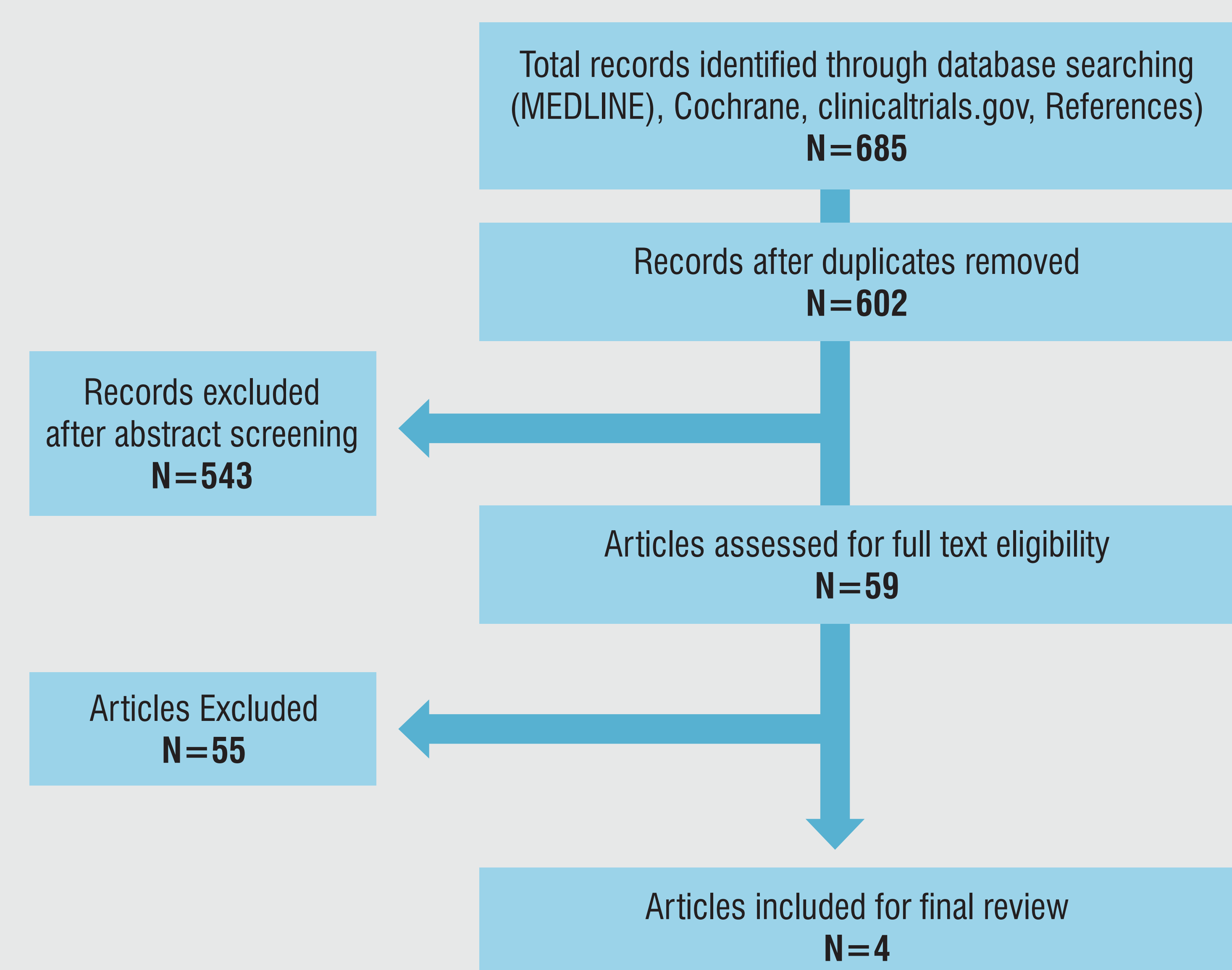
MATERIAL AND METHODS

- Literature searches were conducted in MEDLINE, the Cochrane Library, and clinicaltrials.gov. No language or date restrictions were imposed.
- In addition, references of included studies were searched for relevant studies.
- All randomized controlled trials (RCTs) examining the efficacy and safety of bevacizumab plus chemotherapy in adult patients with histologically confirmed NSCLC in Asian patients were included.

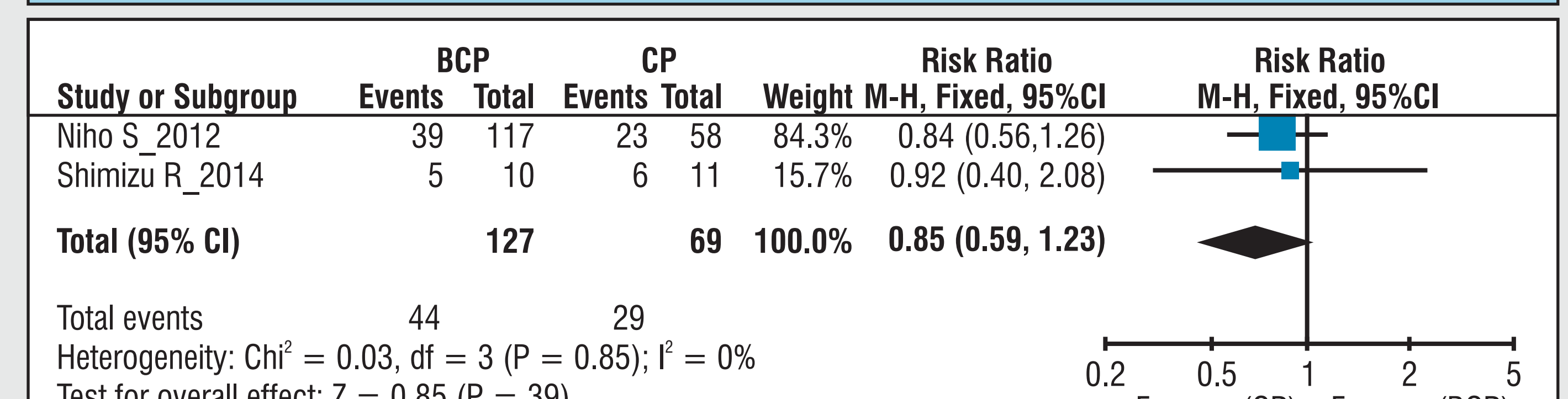
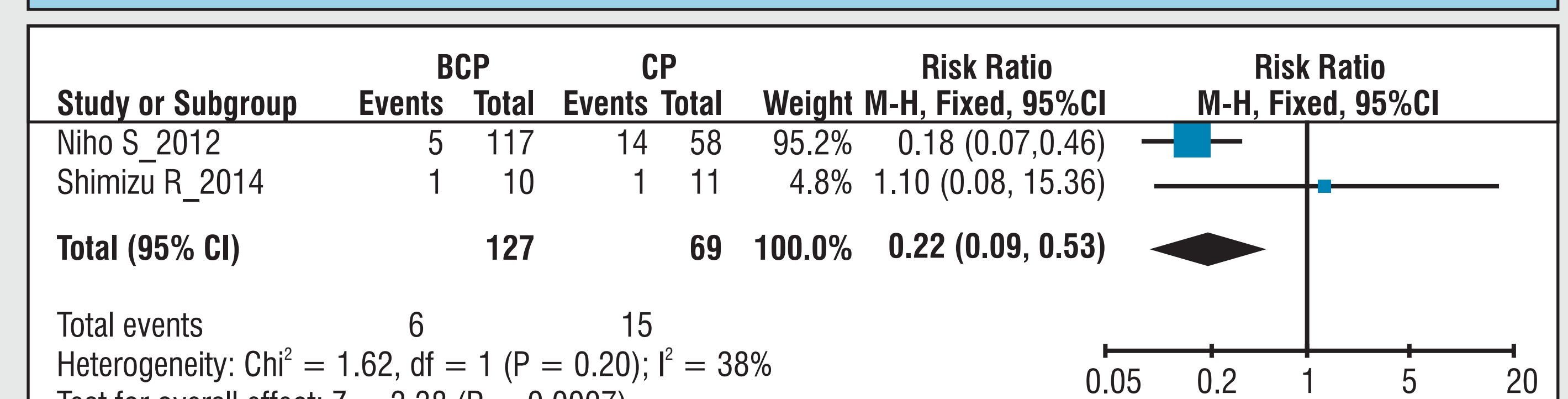
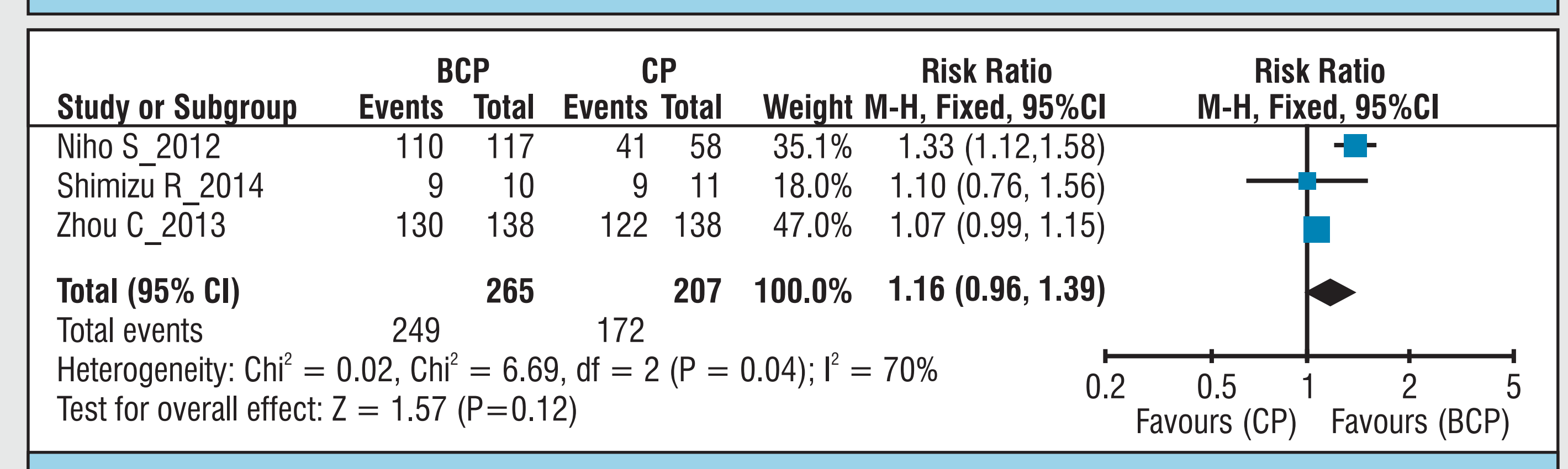
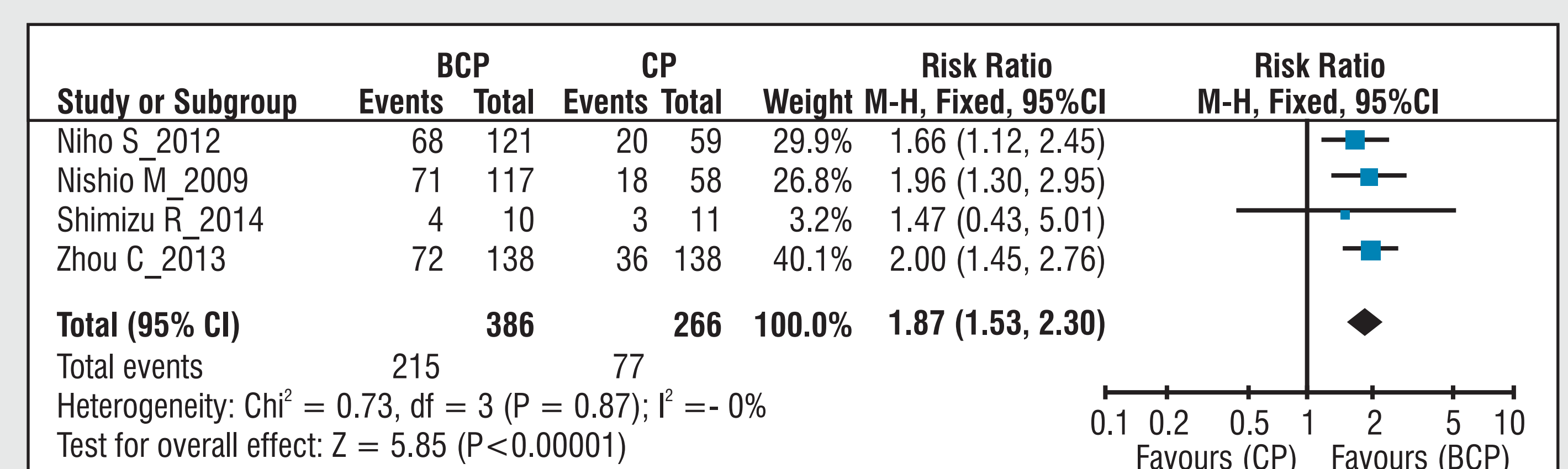
Outcomes:

- **Primary:** Response rate and disease control rate.
- **Secondary:** Progression free survival and adverse events.
- Two authors independently selected papers, extracted data and assessed quality.
- Study quality of included trials were assessed using the Cochrane Risk of Bias Tool.

RESULTS



- A total of 4 RCTs involving a total of 652 patients were included in this meta-analysis.
- A total of 386 patients received bevacizumab, and a total of 266 patients received comparators.
- Overall, the risk of bias of included trials was low.
- Leukopenia and neutropenia were most common haematological adverse events observed with bevacizumab.



DISCUSSION

- Vascular endothelial growth factor A (VEGF) is a potent proangiogenic growth factor that stimulates the proliferation, migration, and survival of endothelial cells.³
- As one of the more important proteins also expressed by tumor cells, VEGF is an important target of anticancer therapy.³
- Bevacizumab is a humanized anti-VEGF monoclonal IgG1 antibody.³
- In combination with chemotherapy, it is approved for the treatment of advanced colorectal cancer, advanced non-small cell lung cancer, metastatic breast cancer, and advanced renal cell cancer.³
- As a single agent, it is approved for second-line treatment of advanced glioblastoma multiforme.³
- Bevacizumab is currently indicated in combination with platinum-based chemotherapy in the first-line treatment of unresected, advanced, metastatic or recurrent NSCLC with non-squamous cell histology.⁴
- Bevacizumab is the only anti-angiogenic agent approved for the first-line treatment of NSCLC.⁴
- Various studies have concluded that treatment with bevacizumab in selected patients with NSCLC was effective in terms of PFS (progression free survival) and OS (overall survival).⁴
- Common adverse events observed during treatment with bevacizumab include hypertension, nephrotic syndrome, bleeding, gastrointestinal perforation, heart failure and neutropenia.²
- Exclusion criteria where bevacizumab is not indicated for usage include squamous histology of lung cancer, and the presence of hemoptysis.⁵

CONCLUSION

Bevacizumab plus chemotherapy is associated with significant improvement in overall response rate, disease control rate, and progression free survival when compared to chemotherapy alone among patients with NSCLC.

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