

Does Preoperative Chest Physiotherapy Affect the Postoperative Pulmonary Complications and Lung Functions in Patients Undergoing Elective Cardiac Surgery? a Systematic Review and Meta-Analysis

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OBJECTIVES

This systematic review and meta-analysis aimed to evaluate the role of preoperative chest physiotherapy in patients undergoing elective cardiac surgeries.

METHODS

A systematic review and meta-analysis.the included studies were those evaluating the value of preoperative chest physiotherapy in adult patients undergoing elective cardiac surgery. The search was performed using the standardized electronic resources. After articles screening based on the eligibility criteria, data were extracted and analyzed. 10 articles investigating 1458 patients were including were included in the study. They were classified into two groups; interventional (I) group involving 651 patients and control (C) group involving 807 patients.

RESULTS

The meta-analyses demonstrated no significant differences between interventional and control groups in the surgery time and the ICU duration and significant differences in the time of mechanical ventilation and the hospital stay length, with favoring of the interventional group. Significant differences were shown in the FEV1%predicted, FVC %predicted, and Pi-max, with favoring of the interventional group. The intervention was protective against the occurrence of PPCs.

CONCLUSIONS

The current work concluded that preoperative chest physiotherapy can yield better outcome in patients undergoing elective cardiac surgery.

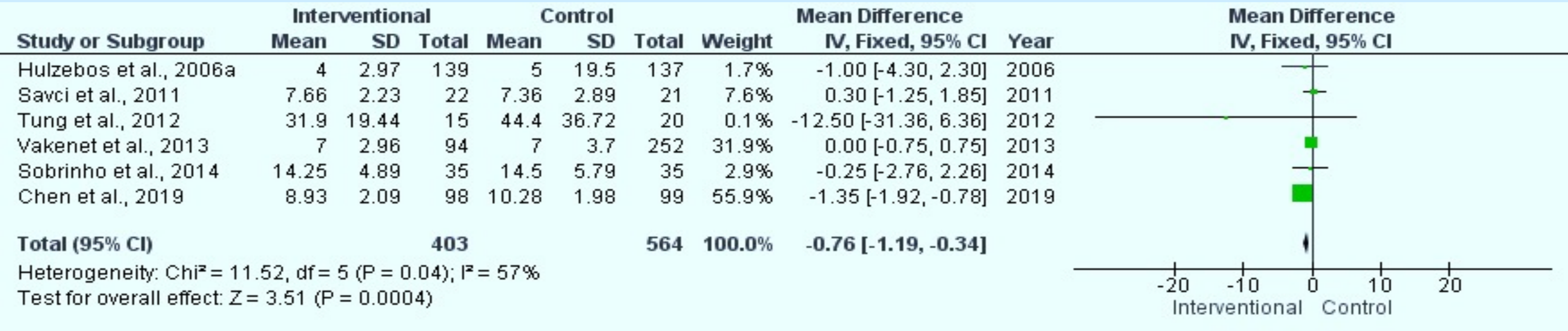


Figure 1. Forest plot evaluating mechanical ventilation duration in the included studies.

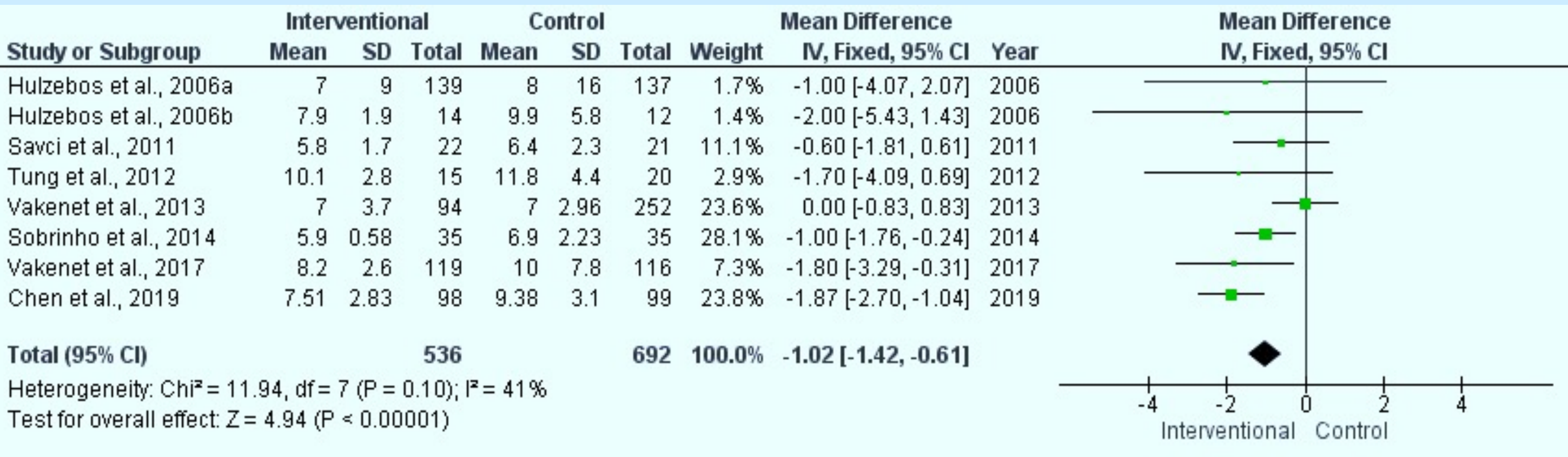


Figure 2. Forest plot evaluating hospital stay length in the included studies.

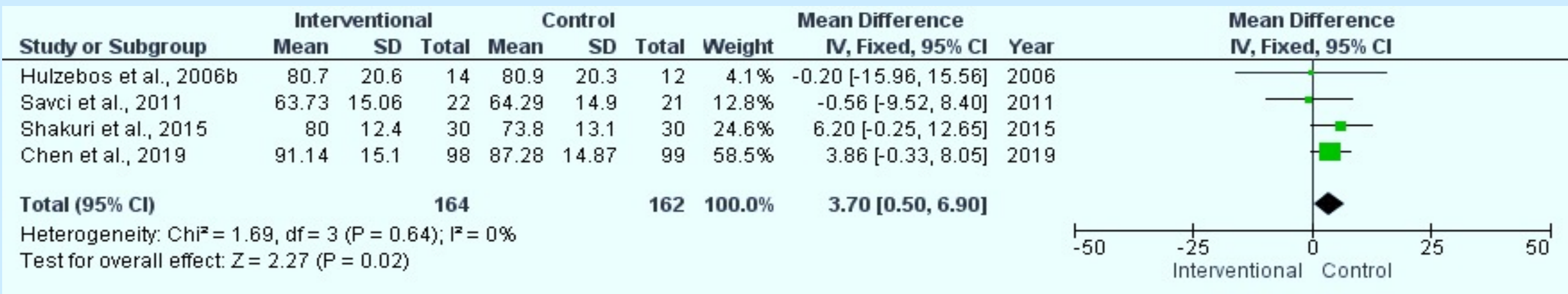


Figure 3. Forest plot evaluating FEV1% predicted in the included studies.

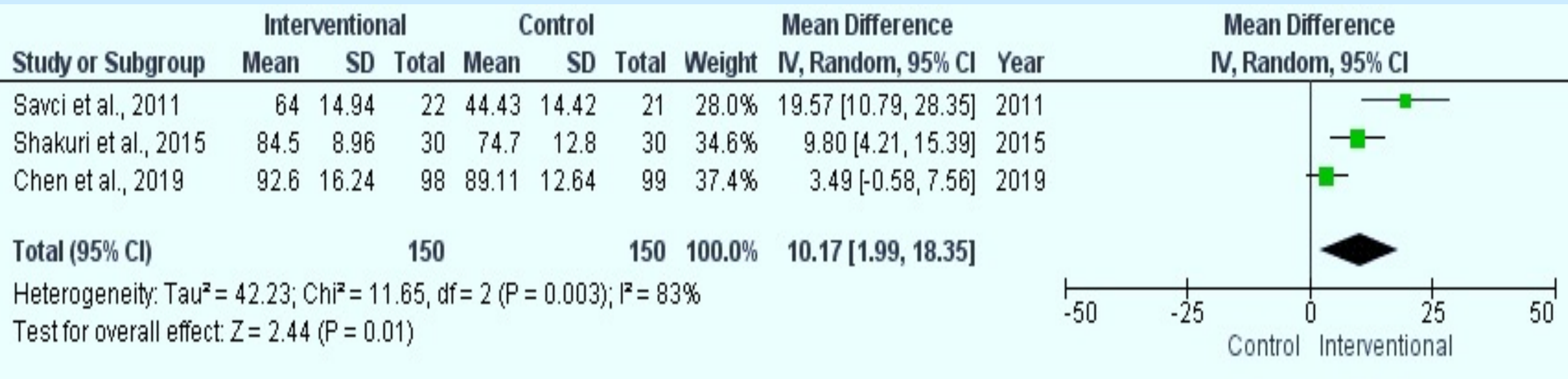


Figure 4. Forest plot evaluating FVC% predicted in the included studies

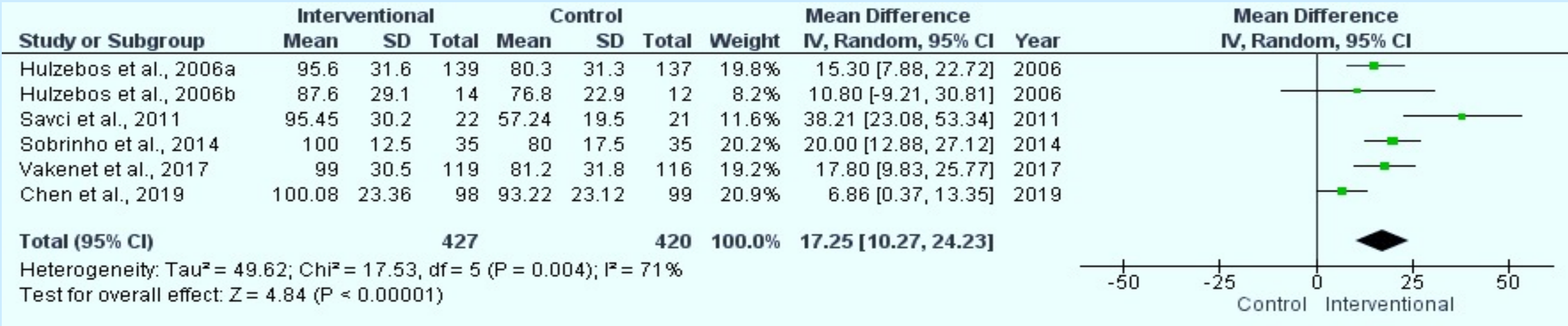


Figure 5. Forest plot evaluating Pi-max in the included studies.

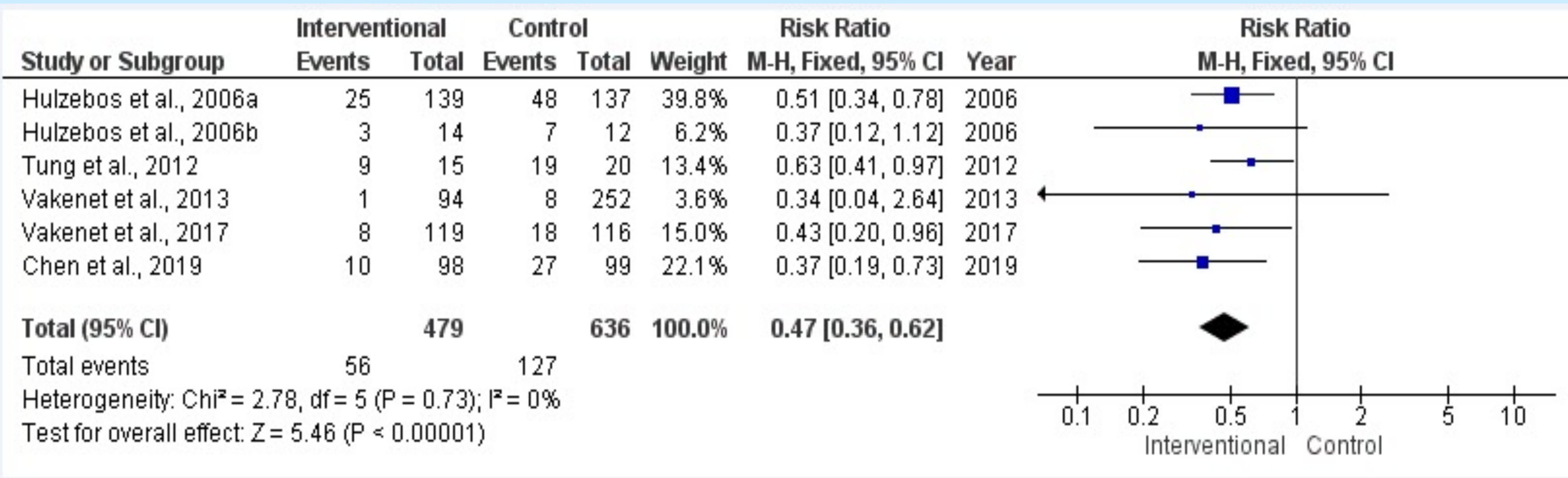


Figure 6. Forest plot evaluating PPCs in the included studies.