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INPLASY

Incidence and predictors for pulmonary aspergillosis in patients with lung cancer: A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

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 15 October 2024 and was last updated on 15 October 2024.

INTRODUCTION

Review question / Objective This study systematically investigates the incidence of pulmonary aspergillosis and associated risk factors in lung cancer patients.

Condition being studied Pulmonary aspergillosis is a rare but significant complication following lung cancer surgery, which increases risk of mortality. The incidence of pulmonary aspergillosis and risk factors among lung cancer patients is unknown.

METHODS

Search strategy 'lung cancer' and 'Pulmonary aspergillosis'.

Participant or population All of included patients diagnosed with lung cancer, irrespective cancer type and stages.

Intervention Patients infected by CPA.

Comparator Patients did not infected by CPA.

Study designs to be included Prospective and retrospective observational design.

Eligibility criteria (1) Patients: all of included patients diagnosed with lung cancer, irrespective cancer type and stages; (2) Exposure: patients infected by CPA; (3) Control: patients did not infected by CPA; (4) Outcomes: the incidence of CPA or predictors for CPA in lung cancer patients; and (5) Study design: prospective and retrospective observational design.

Information sources PubMed, Embase and Cochrane Library.

Main outcome(s) The incidence of CPA in lung cancer patients.

Additional outcome(s) Predictors for CPA in lung cancer patients.

Data management Two reviewers independently extracted the following information from the included studies: first authors' surname, publication year, country, study design, sample size, age, male proportion, body mass index (BMI), smoking proportion, diagnosis criteria for CPA, disease status, treatments, and investigated effect estimates.

Quality assessment / Risk of bias analysis Then, these two reviewers independently assessed the quality of the included studies using the Newcastle-Ottawa Scale (NOS) scale, which primarily comprises sections on selection (4 items), comparability (1 item), and outcome (3 items).

Strategy of data synthesis The overall incidence of CPA in lung cancer patients was pooled using a random-effects model with logit transformation, and all models were fitted using restricted maximum likelihood estimation. For studies with zero events, a continuity correction of 0.5 was applied. Then the predictors for CPA in lung cancer patients were assigned as odds ratio (OR) with 95% confidence intervals (CIs), and the pooled analyses were calculated using the random-effects model.

Subgroup analysis Subgroup analyses for incidence of CPA in lung cancer patients according to country, and the differences between subgroups were compared using interaction t test, which assuming the data met normal distribution.

Sensitivity analysis Sensitivity analyses were performed to assess the robustness of pooled conclusion via sequential removing individual study.

Language restriction No restriction.

Country(ies) involved China.

Keywords incidence; predictors; pulmonary aspergillosis; lung cancer; systematic review; meta-analysis.

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