INPLASY PROTOCOL

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

Conflicts of interest:
None declared.

Computed tomography-guided lung biopsy with rapid on-site evaluation for diagnosis of lung lesions: A meta-analysis

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Review question / Objective: **We aim to asses the diagnostic efficacy and safety of CT-guided lung biopsy with rapid on-site evaluationROSE for lung lesions.**
Condition being studied: **t present, lung biopsy is a safe and effective method for diagnosis of lung masses and nodules. However, the misdiagnosis of lung malignancies was attributed to failure in obtaining enough qualified samples. Rapid on-site evaluation can provide rapid cytomorphological evaluation and quick assessment of the adequacy and features of the obtained tissue samples, which helps guidance for further lung biopsy.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 August 2022 and was last updated on 16 August 2022 (registration number INPLASY202280063).

INTRODUCTION

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METHODS

Search strategy: ((((Computed Tomography) OR (CT)) AND ((lung) OR (pulmonary))) AND (biopsy)) AND ((Rapid On-Site Evaluation) OR (ROSE)).

Participant or population: Lung massess or lung nodules.

Intervention: CT-guided biopsy with ROSE.

Comparator: CT-guided biopsy without ROSE.

Study designs to be included: (a) Types of studies: comparative studies;(b) Diseases: lung lesions which were needed for CT-guided LB;(c) Types of interventions: CT-guided LB with ROSE versus CT-guided LB alone;(d) Languages: not limited.

Eligibility criteria: (a) Types of studies: comparative studies;(b) Diseases: lung lesions which were needed for CT-guided LB;(c) Types of interventions: CT-guided LB with ROSE versus CT-guided LB alone;(d) Languages: not limited.

Information sources: PubMed, Embase, and Wanfang databases.

Main outcome(s): Diagnostic accuracy.

Quality assessment / Risk of bias analysis: The Cochrane risk-of-bias tool was used to establish the quality of randomized controlled trials. Observational study quality was assessed using the Newcastle-Ottawa scale (NOS).

Strategy of data synthesis: Pooled analyses were conducted using RevMan v5.3. For dichotomous variables, pooled odds ratios (ORs) with 95% confidence intervals (CIs) were calculated, while continuous variables were compared using mean differences (MD) values with 95% CIs. The I2 statistic and Q test were used to assess heterogeneity, with an I2 > 50% being considered indicative of significant heterogeneity. When heterogeneity was significant, random-effects models were used, whereas fixed-effect models were otherwise used. Sensitivity analyses were conducted via a "leave one out" approach in an effort to detect sources of heterogeneity. Subgroup analyses were additionally conducted of studies focused specifically on ground glass nodules (GGNs). Publication bias was analyzed using Egger's test by Stata v12.0, with $P < 0.05$ as the significance threshold.

Subgroup analysis: None.

Sensitivity analysis: Yes.

Country(ies) involved: China.

Keywords: lung; biopsy; ROSE.

Contributions of each author:
Author 1 - Di Wu.
Author 2 - Tao Wang.
Author 3 - Ya-Yong Huang.
Author 4 - Yue-Yue Liu.