INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Does the use of Rapid On Site Evaluation (ROSE) during Transbronchial Needle Aspiration of lung or mediastinal lesions improve diagnostic yield? A systematic review and meta-analysis

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Review question / Objective: **In patients undergoing EBUS or conventional transbronchial needle aspiration of lung or mediastinal lesions, what is the impact of having ROSE (rapid on-site cytological evaluation) on the diagnostic yield, number of needle passes, and requirement for additional bronchoscopic procedures to make the diagnosis?**
Condition being studied: **Pulmonary and mediastinal lesions including lung cancer and sarcoidosis.**
Information sources: **PubMed, Embase and cochrane will be queried to find relative studies, as well as clinical trial registries (https://clinicaltrials.gov). we will also look through the references of the relevant studies to find any additional studies.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 May 2022 and was last updated on 13 May 2022 (registration number INPLASY202250084).

INTRODUCTION

Review question / Objective: **In patients undergoing EBUS or conventional transbronchial needle aspiration of lung or mediastinal lesions, what is the impact of having ROSE (rapid on-site cytological evaluation) on the diagnostic yield, number of needle passes, and requirement for additional bronchoscopic procedures to make the diagnosis?**

Rationale: **The utility of ROSE during EBUS procedures is unclear. It is costly and not always available. Conflicting evidence is**

available in the form of RCTs and retrospective studies regarding if the use of ROSE results in fewer number of passes during EBUS, shorter procedures, less additional procedures, and higher diagnostic yield. We want to analyze the available studies to settle this question.

Condition being studied: Pulmonary and mediastinal lesions including lung cancer and sarcoidosis.

METHODS

Search strategy: Search terms: (ebus OR eus OR endosono* OR "endobronchial ultrasound" OR "endoscopic ultrasound" OR "ebus-tbna" OR "eus-fna") AND ("transbronchial needle aspiration" OR "tbna" OR "needle aspiration") AND ("rapid onsite evaluation" OR "rose" OR "rapid onsite cytological evaluation") Databases to be searched: Pubmed, Embase and cochrane.

Participant or population: Patients with mediastinal or pulmonary lesions who undergo EBUS or cTBNA.

Intervention: ROSE.

Comparator: No ROSE.

Study designs to be included: RCTs and retrospective studies.

Eligibility criteria: All studies with patients undergoing EBUS or cTBNA for pulmonary or mediastinal lesions where the samples are either analyzed with ROSE or No ROSE at the time of the procedure will be included.

Information sources: PubMed, Embase and cochrane will be queried to find relative studies, as well as clinical trial registries (https://clinicaltrials.gov). we will also look through the references of the relevant studies to find any additional studies.

Main outcome(s): Diagnostic yield of the EBUS procedure. Number of needle passes. Complications. Duration of the procedure. Requirement of additional procedures to make the diagnosis.

Additional outcome(s): In patients with cancer, the availability of enough tissue to perform genetic testing, if included in the studies.

Data management: Endnote will be used to combine the references and select through them

Quality assessment / Risk of bias analysis: Cochrane risk of bias tool will be used to assess the quality of the studies.

Strategy of data synthesis: Metanalysis will be done. RevMan will be used to analyze the data.

Subgroup analysis: Subgroups to be analyzed include the type of sedation used, malignant or non malignant indication of the procedure, needle gauge.

Sensitivity analysis: Sensitivity analysis will be done to see if findings from RCTs are different from findings in retrospective studies.

Language: English.

Country(ies) involved: United States.

Other relevant information: None.

Keywords: EBUS, TBNA, Rapid On-Site Evaluation, ROSE.

Dissemination plans: We hope to publish this review in a pulmonary-critical care journal.

Contributions of each author:

Author 1 - Ahmed Elkhapery will be involved in screening the studies, data collection, and analyzing the data, risk of bias assessment strategy, as well as drafting the manuscript.
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