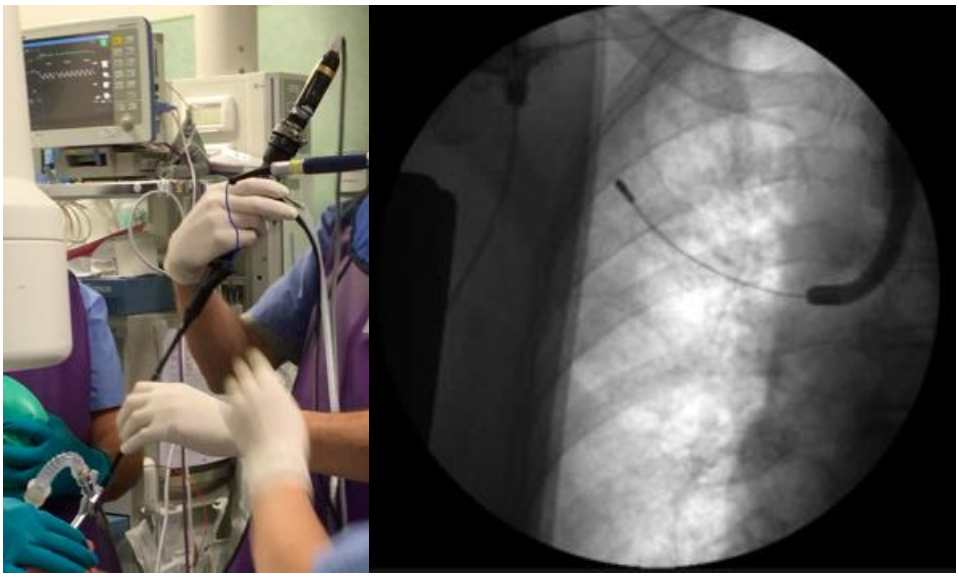
ERS pocket guidelines

From the ERS task force on transbronchial lung cryobiopsy in interstitial lung diseases

European Respiratory Society guidelines on transbronchial lung cryobiopsy in the diagnosis of interstitial lung diseases



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Outline

ERS TASK FORCE ON TRANSBRONCHIAL LUNG CRYOBIOPSY IN INTERSTITIAL LUNG DISEASES

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Question #1: In patients with undiagnosed ILD (interstitial lung disease) considered eligible to undergo SLB (surgical lung biopsy), is TBLC (transbronchial lung cryobiopsy) a valid replacement test?

For patients with undiagnosed ILD considered eligible to undergo SLB, the task force suggests performing TBLC if obtaining histopathological data is indicated.

- **Conditional recommendation**
- **Very low certainty of the evidence**

Remark

This recommendation applies to centers experienced in performing TBLC.

Evidence on benefits and harms

- Diagnostic agreement between TBLC and SLB in ILD is moderate.
- Diagnostic yield for a histopathological diagnosis is high for TBLC, yet somewhat higher for SLB.
- A high or definite confidence final diagnosis (in multidisciplinary team discussion) can be obtained with both TBLC and SLB in the majority of patients.
- Increase in diagnostic confidence is significant for TBLC.
- Diagnostic accuracy for diagnosing idiopathic pulmonary fibrosis (IPF) is moderate for (multidisciplinary team discussion informed by) TBLC.
- Multidisciplinary team discussion diagnosis of IPF based on TBLC or SLB are both significantly associated with 5-year transplant-free survival.
- Severe complications (mortality) are lower for TBLC compared to SLB.
- Mean time of post-procedural hospitalization is shorter for TBLC compared to SLB.
- Costs appear to be lower for TBLC compared to SLB.

Rationale of recommendation

In a considerable proportion of ILD patients, lung biopsy is recommended by MDD to establish a confident diagnosis. Historically, SLB has been considered the reference standard for lung tissue acquisition in these patients. Overall, the task force considers the reduction in serious adverse events for TBLC versus SLB to outweigh the reduced diagnostic yield, in cesnters experienced in performing TBLC.

Implementation considerations

Availability of TBLC varies across countries, and not all patients may have easy access to it. Minimum requirements for safe implementation of TBLC should include elements such as the availability of competent TBLC-operators, and the ability to safely apply sedation, promptly manage complications and ensure airway protection. In addition, adequate patient selection in an MDD-setting should be ensured. For quality assurance, healthcare centers that offer TBLC or SLB are advised to keep track of outcomes such as diagnostic yield and complications.

Question #2: In patients with undiagnosed ILD not considered eligible to undergo SLB, does TBLC increase the diagnostic confidence of the multidisciplinary team discussion?

For patients with undiagnosed ILD not considered eligible to undergo SLB, the task force suggests TBLC if obtaining histopathological data is indicated.

- **Conditional recommendation**
- **Very low certainty of the evidence**

Remark

This recommendation applies to centers experienced in performing TBLC; the advantages of potentially increasing diagnostic certainty by performing TBLC against the disadvantages of potential serious adverse events should be weighed in each individual patient.

Evidence on benefits and harms

- Evidence is limited in this subgroup of patients.
- Diagnostic yield for a histopathological diagnosis seems high.
- Adverse events vary across studies, probably due to considerable differences in disease severity across included patients.

Rationale of recommendation

Some patients with ILD have severe respiratory or comorbid disease, and they may not be able to tolerate SLB. Others may have rapidly progressive ILD, and risk of further acceleration may be increased after performing SLB. The task force assumes that diagnostic yield of TBLC in these patients is likely to be similar as for patients considered eligible to undergo SLB (Question #1), but there are no data to confirm this. Limited evidence from high-volume centers suggests safety in high-risk patients, but the risk of accelerating disease in patients who are critically ill or have rapidly progressive ILD may be unacceptably high. The advantages of potentially increasing diagnostic certainty against the disadvantages of potential adverse events should be carefully weighed in each patient.

Implementation considerations

Despite some reassurances from the literature, a conservative approach for patient selection is recommended for centers with less experience in real world practice. Healthcare centers that offer TBLC in patients not considered eligible to undergo SLB are advised to collect data on outcomes such as diagnostic yield, complications and patient-important outcomes.

Question #3: In patients with undiagnosed ILD and a non-informative TBLC, is step-up SLB or second TBLC a valid add-on test?

For patients with undiagnosed ILD and a non-informative TBLC, the task force suggests performing step-up SLB if obtaining histopathological data is indicated.	• **Conditional recommendation** • **Very low certainty of the evidence**
For patients with undiagnosed ILD and a non-informative TBLC, the task force makes no recommendation about performing second TBLC if obtaining histopathological data is indicated.~~as there is no evidence.~~	• **No recommendation** • **No relevant evidence**

Evidence on benefits and harms

- Diagnostic yield for a histopathological diagnosis is high for step-up SLB.
- Diagnostic confidence increases after step-up SLB.
- Severe adverse event rates for SLB are higher compared to TBLC (extrapolated from Question #1).
- Evidence on second TBLC is mostly missing.

Rationale of recommendation

Performing TBLC does not always result in a high confidence diagnosis in multidisciplinary team discussion, and it may be decided that additional efforts to obtain a histopathological diagnosis are warranted. In general, the task force believes that the

potential disadvantages (adverse events and costs) are outweighed by the need to obtain a histopathological diagnosis, if MDD judges that this is indicated. Therefore, the balance is probably in favor of performing step-up SLB. Yet, this should be decided upon on a case-by-case level, taking into account factors such as (relative) contra-indications (e.g. severe lung function or cardiac impairment) to undergo additional testing. The patient representatives who provided input agreed that they expected that, if initial TBLC is non-informative, most patients would opt for step-up SLB rather than second TBLC as subsequent diagnostic.

Implementation considerations

Healthcare centers that offer step-up SLB or second TBLC after a non-informative initial TBLC are advised to collect data on outcomes such as diagnostic yield and complications.

Question #4: Is formal training in TBLC recommended to optimize yield and minimize adverse events in patients with undiagnosed ILD?

The task force suggests that TBLC-operators should undergo training.

A recommendation on the optimal type of training cannot be made due to lack of evidence.

- **Conditional recommendation**
- **Very low certainty of the evidence**

Evidence on benefits and harms

- Diagnostic yield for a histopathological diagnosis, sample length and sample area seem to be positively associated with operator experience.
- Adverse events seems to reduce in late versus early procedures.

Rationale of recommendation

Training is important to achieve operator competency, as diagnostic yield increases and adverse events decrease with experience. Introducing TBLC in less experienced centers may result in higher rates of complications.

Implementation considerations

A certain level of training is needed to perform TBLC in a standardized, safe, and effective way. If implemented, the impact of formal TBLC training programs must be monitored closely.