

Transbronchial cryobiopsy in the diagnosis of ILD

Rohit Pradhan

Medical Centre, United Arab Emirates

Correspondence: Rohit Pradhan, Pulmonologist India, Middle East, JVC Dubai, United Arab Emirates, Tel +0528394257, Email chestdr@gmail.com

Received: February 02, 2018 | **Published:** February 06, 2018

Copyright© 2018 Pradhan. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Editorial

ILD includes a wide spectrum of heterogenous entities which require accurate diagnoses. The diagnosis of ILD is performed by a multidisciplinary team that involves a pulmonologist, radiologist and pathologist.¹⁻² Surgical pulmonary biopsy continues to be considered the gold standard for recognising histological patterns and aiding us in considering possible causes of disease. A conventional transbronchial biopsy using forceps is the first diagnostic technique performed on patients with ILD; however, the small size of the samples and presence of artefacts in the tissue obtained makes the yield variable. There is a high likelihood of getting a tissue sample from only centrilobular areas which obviously precludes identifying varied complex and heterogeneous patterns of ILDs.³ Recent studies have been published that confirm the efficacy of new treatments, such as pirfenidone, in patients with idiopathic pulmonary fibrosis. The early diagnosis of disease is therefore important.⁴ To get a clear-cut diagnosis, a pathological sample obtained from a surgical lung biopsy is recommended. This procedure in itself carries significant morbidity and mortality. In one study it carries 2-4% mortality within 90 days following the surgical lung biopsy. In addition, the surgical lung biopsy sample does not have a high inter-observer concordance amongst expert pathologists which suggests that bigger is not necessarily better.³

What we have now is a recently proposed, less invasive procedure perceived as safe called 'cryobiopsy.' Cryobiopsy uses compressed gas to cool lung parenchyma at the site of cryoprobe which is then retracted with an attached specimen. Overall, in most of the studies the diagnostic yield was superior or equal to 0.7 and had an acceptable safety profile with a mortality rate less than 0.1%. Tomassetti et al.⁵ in their series of 117 patients found the use of cryoprobe specimen led to a change in the initial clinicopathological diagnosis in 26% of cases (compared with around 36% of those undergoing surgical lung biopsy), and among those ultimately diagnosed with IPF the addition of histologic information from cryobiopsy specimen resulted in an

improved diagnostic confidence to the same extent as a patient who had undergone a surgical lung biopsy.

Current data suggest that transbronchial lung biopsy by cryoprobe may play a major role in the diagnosis workup of ILD, as it is often significantly advantageous in terms of safety compared with a surgical lung biopsy and guarantees an excellent diagnostic profile. However, further prospective studies are needed to better define relevant technical aspects of cryobiopsy such as optimal number of biopsies to be obtained and the utility of sampling different segments or even different lobes to standardise the procedure as much as possible.

References

1. European Respiratory Society, American Thoracic Society/European Respiratory Society International Multidisciplinary Consensus Classification of the Idiopathic Interstitial Pneumonias. This joint statement of the American Thoracic Society (ATS), and the European Respiratory Society (ERS) was adopted by the ATS board of directors, June 2001 and by the ERS Executive Committee, June 2001. *Am J Respir Crit Care Med.* 2002;165(2):277-304.
2. Travis WD, Costabel U, Hansell DM, et al. An official American Thoracic Society/European Respiratory Society statement: update of the international multidisciplinary classification of the idiopathic interstitial pneumonias. *Am J Respir Crit Care Med.* 2013;188(6):733-748.
3. Gasparini S, Bonifazi M. Cryobiopsy for interstitial lung diseases. *J Bronchology Interv Pulmonol.* 2016;23(1):4-6.
4. King TE, Bradford WZ, Castro-Bernardini S, et al. A phase 3 trial of pirfenidone in patients with idiopathic pulmonary fibrosis. *N Engl J Med.* 2014;370(22):2083-2092.
5. Tomassetti S, Wells AU, Costabel U, et al. Bronchoscopic lung cryobiopsy increases diagnostic confidence in the multidisciplinary diagnosis of idiopathic pulmonary fibrosis. *Am J Respir Crit Care Med.* 2016;193(7):745-752.