

Cone Beam Computed Tomography improves the precise location of the probe when performing transbronchial cryobiopsy in interstitial lung disease

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Background

Idiopathic Pulmonary Fibrosis (an Update) and Progressive Pulmonary Fibrosis in Adults An Official ATS/ERS/JRS/ALAT Clinical Practice Guideline

Two studies reported agreement between the diagnostic interpretation of TBLC samples and SLB samples (28, 60). The larger study demonstrated 70.8% agreement, which increased to 76.9% diagnostic agreement after MDD (28). *Post hoc* analysis suggested that agreement of TBLC with SLB improves by taking more samples (29). In contrast, the smaller study reported diagnostic agreement of only 38% (60).

COMPLICATIONS. Complications of TBLC included pneumothorax in 9% (28, 31, 33–35, 37, 39–43, 46, 48–50, 53–55, 60, 63, 68, 69) and any bleeding in 30% (28, 31, 33, 36, 39, 47, 50, 51, 55, 67–69). Severe bleeding, procedural mortality, exacerbations, respiratory infections, and persistent air leak were rare.

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- Transbronchial lung cryobiopsy (TBLC) is now a valid alternative to surgical lung biopsy for the diagnosis of interstitial lung diseases, when performed in centers with appropriate expertise.
- However, the precise location of the probe and the exact distance from the pleura are sometimes difficult to establish.



Early View

Task force report

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

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Korevaar DA, et al. Eur Respir J. 2022 Jun.

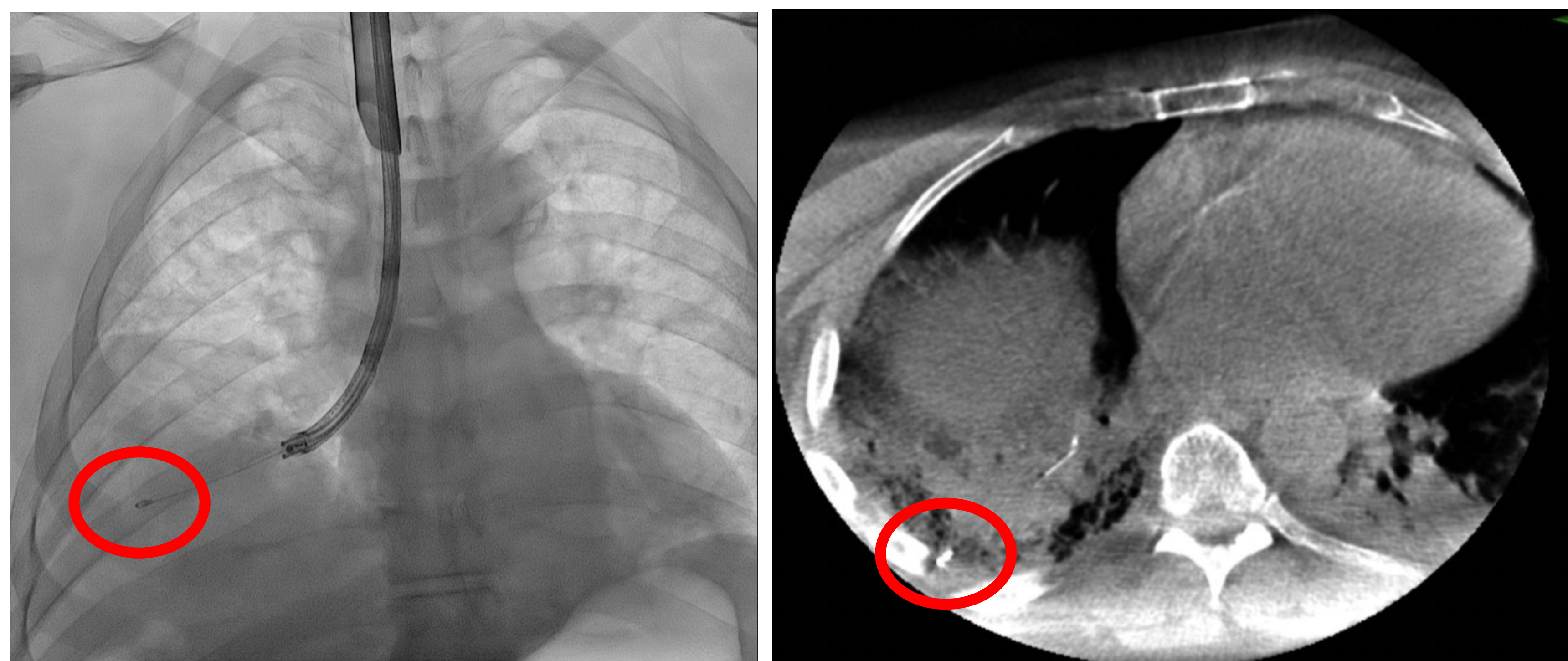
Methods

This is a prospective observational monocentric study.

Primary end-point

Our aim is to find out feasibility and safety of cryobiopsy when performed under Cone Beam 3D CT (CBCT) guide.

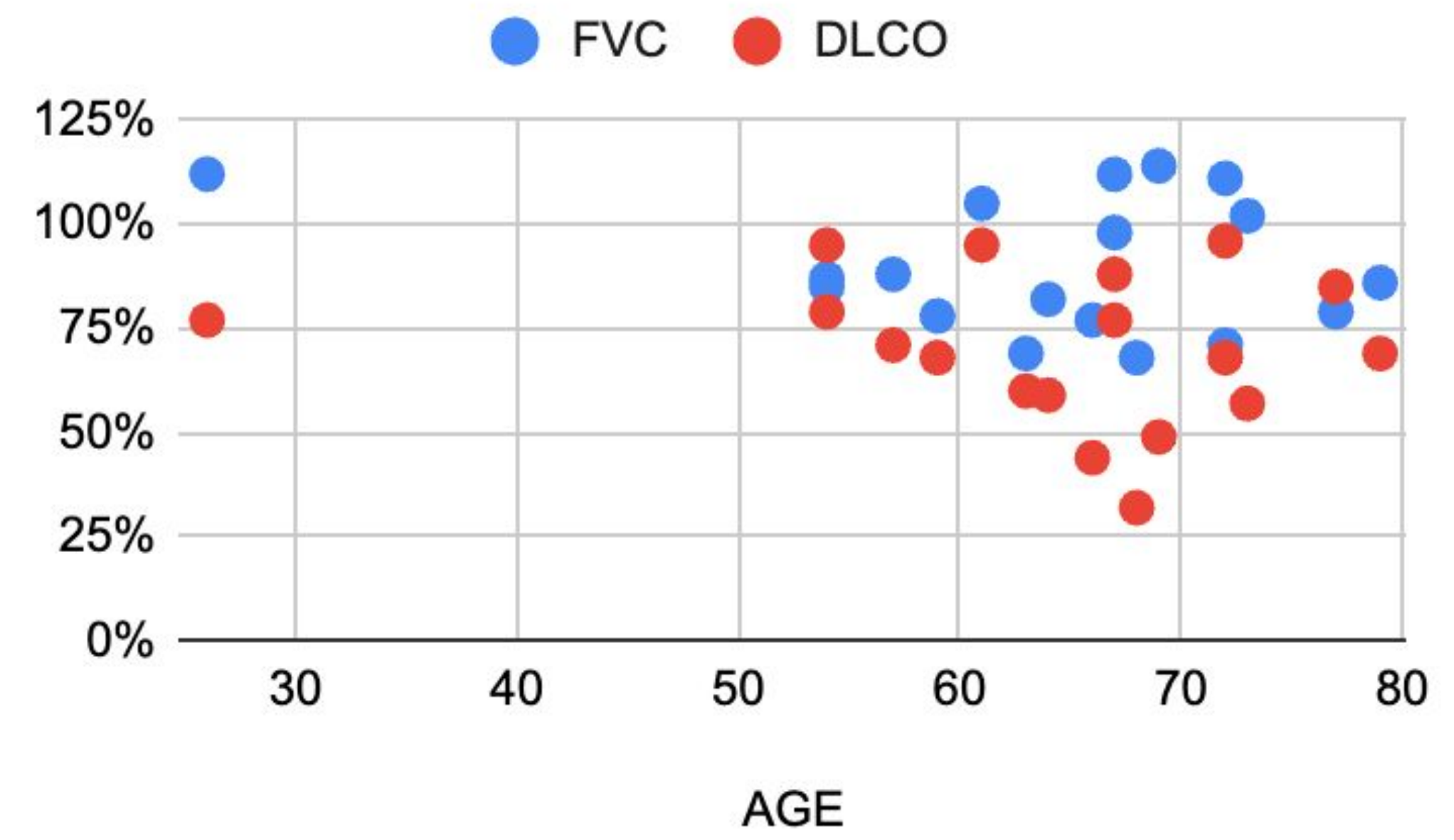
- Patients with suspected diffuse parenchymal lung disease are prospectively enrolled.
- All demographic data, lung function tests, imaging patterns, biopsy characteristics, diagnostic yield and complications are collected.
- Bronchoscopies are performed through a rigid tube, under general anesthesia, in a hybrid CBCT operation room. 3D CT images are acquired and reviewed in axial, coronal and sagittal planes to accurately assess the cryoprobe position.



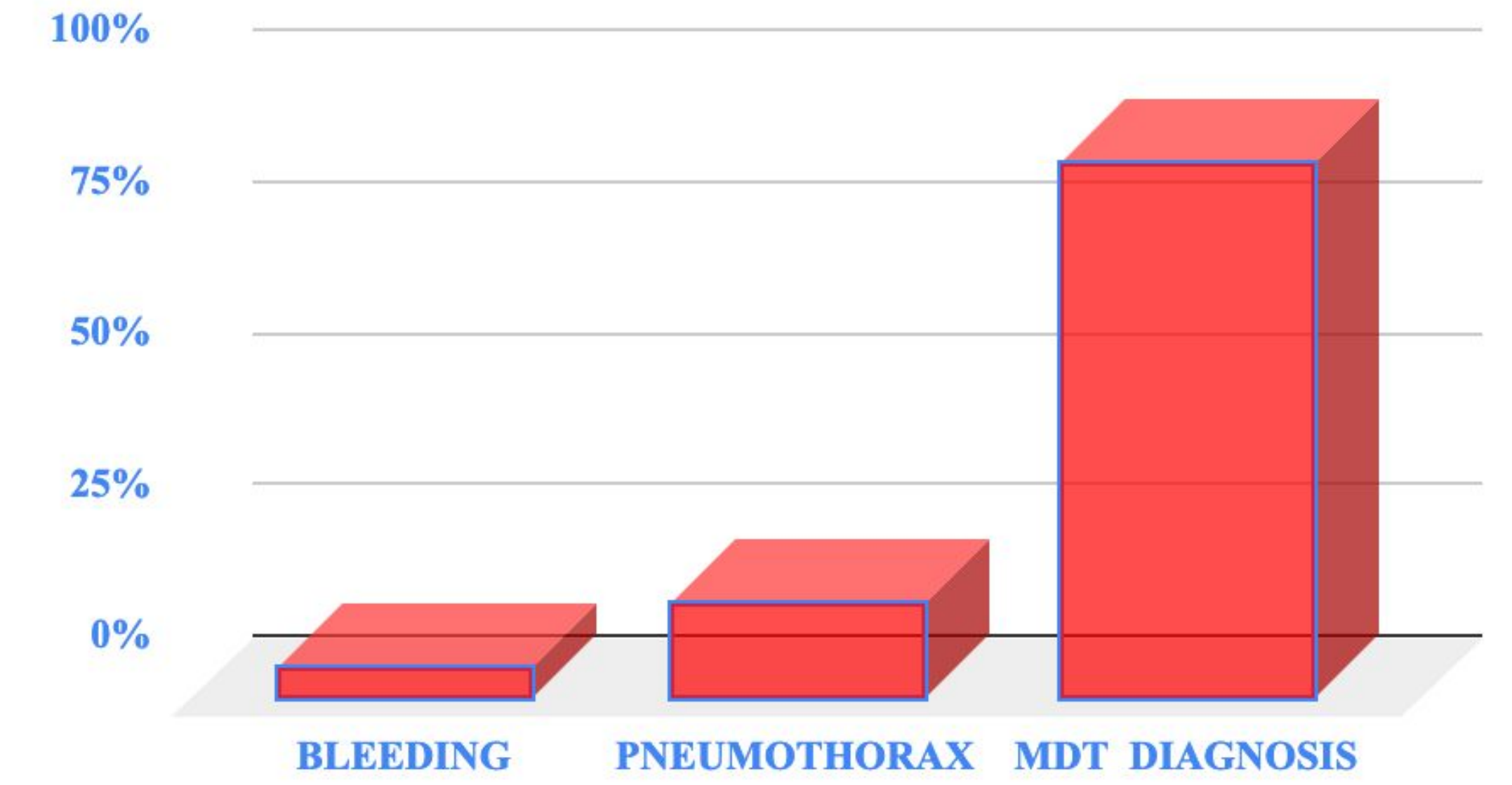
- Cryobiopsy is performed with 1.7 mm probe following probe positioning and, after each biopsy, Fogarty balloon is immediately inflated to prevent bleeding.

Results

18 patients have been prospectively recruited until now. Enrollment will end when 30 patients will be reached. Average age was 63,77 years. Average FVC was 91% predicted, average DLCO was 72% predicted.



A final multidisciplinary diagnosis was obtained in 88,8% of cases. Three patients (16%) developed a pneumothorax, which required a pleural drainage. One (5%) moderate bleeding was observed.



Conclusion

CBCT-guided TBLC in patients with ILDs is associated with a promising diagnostic yield and an acceptable safety profile. A larger trial is necessary to validate the results.