

# Adequacy of image guided biopsies in view of new standards of practice issued by CIRSE

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## Background and Aim

Biopsies play an important role in clinical care

Aim to assess the adequacy of biopsies (technical and histological success rates; and complication rates) based on the updated CIRSE standard of practice guidelines issued in 2017

## Standard

Technical success rate - 75%

Successful histology adequacy rate - 75%

Major complication rate - 2%

- For thoracic - Minor comp rate - 45%  
Major comp rate - 3%

## Methodology

Retrospective data collection (July 2016 - June 2017)  
All cases were identified and data obtained from Radiology and Hospital Information Systems, clinic letters and MDT outcome datasets.

Bone, breast and axillary lymph node (secondary to breast pathology) biopsies were excluded.

Organ Biopsied	Number	Results		Histological Adequacy			
		Complication Rate		Cons	StR	Others	
Lung	105 (35%)	<b>Yes</b>	<b>No</b>	Met (72%)	167	85	4
Liver	116 (33%)	65 (18%)	290 (82%)	Partial (7%)	15	9	
Lymph node	75 (21%)	Minor 60 (16.6%) Major 5 (1.4%)		Not met (21%)	56	19	
Renal	30 (8%)	Major		<ul style="list-style-type: none"> <li>• Needle gauge did not determine outcome in lung / liver biopsy.</li> <li>• Larger needle gauge and increased number of samples has positive correlation with nodal biopsy</li> </ul>			
Misc	29 (8%)	• 4 chest drains instead • 1 bleed embolised		Outcome of failed histology cases			
		Gauge of the biopsy needle did not influence complication rate		Image guided biopsy repeated in 34% Surgical biopsy/excision in 16% Biopsy not repeated in 49%			
			Thoracic biopsies	Non-thoracic biopsies			
			Major 4 (3.8%)	1 (0.4%)			
			Minor 55 (52%)	5 (2%)	<ul style="list-style-type: none"> <li>• Followed up clinically /imaging in 70%</li> </ul>		

## Discussion

Overall histological adequacy and minor complication rate for thoracic biopsies was below acceptable standard

For lymphoma diagnosis - small gauge biopsy needle and fewer cores were associated with histological inadequacy

## Recommendations

- Appropriate patient selection especially for lymph node biopsies
- Use 16 G biopsy needle and 4 cores for lymph nodes where lymphoma is a possibility
- Track embolisation to reduce risk of pneumothorax
- Develop a service where pneumothorax is managed on an outpatient bases with Heimlich valve

## References:

Veltri A., et al. CIRSE Guidelines on Percutaneous Needle Biopsy (PNB). Cardiovascular and Interventional Radiology. 2017 Dec; 40(10): 1501-1513

Gupta S., et al. Quality Improvement Guidelines for Percutaneous Needle Biopsy. Journal of Vascular and Interventional Radiology . 2010 Jul; 21(7): 969-975