

# DIAGNOSTIC ACCURACY OF ENDOSCOPIC ULTRASOUND (EUS) GUIDED FINE NEEDLE BIOPSY (FNB) BY MACROSCOPIC ON-SITE EVALUATION (MOSE): A SYSTEMATIC REVIEW & META-ANALYSIS

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## 1. Background

- EUS-guided FNB is an established technique for tissue acquisition of GI lesions.



EUS guided tissue acquisition



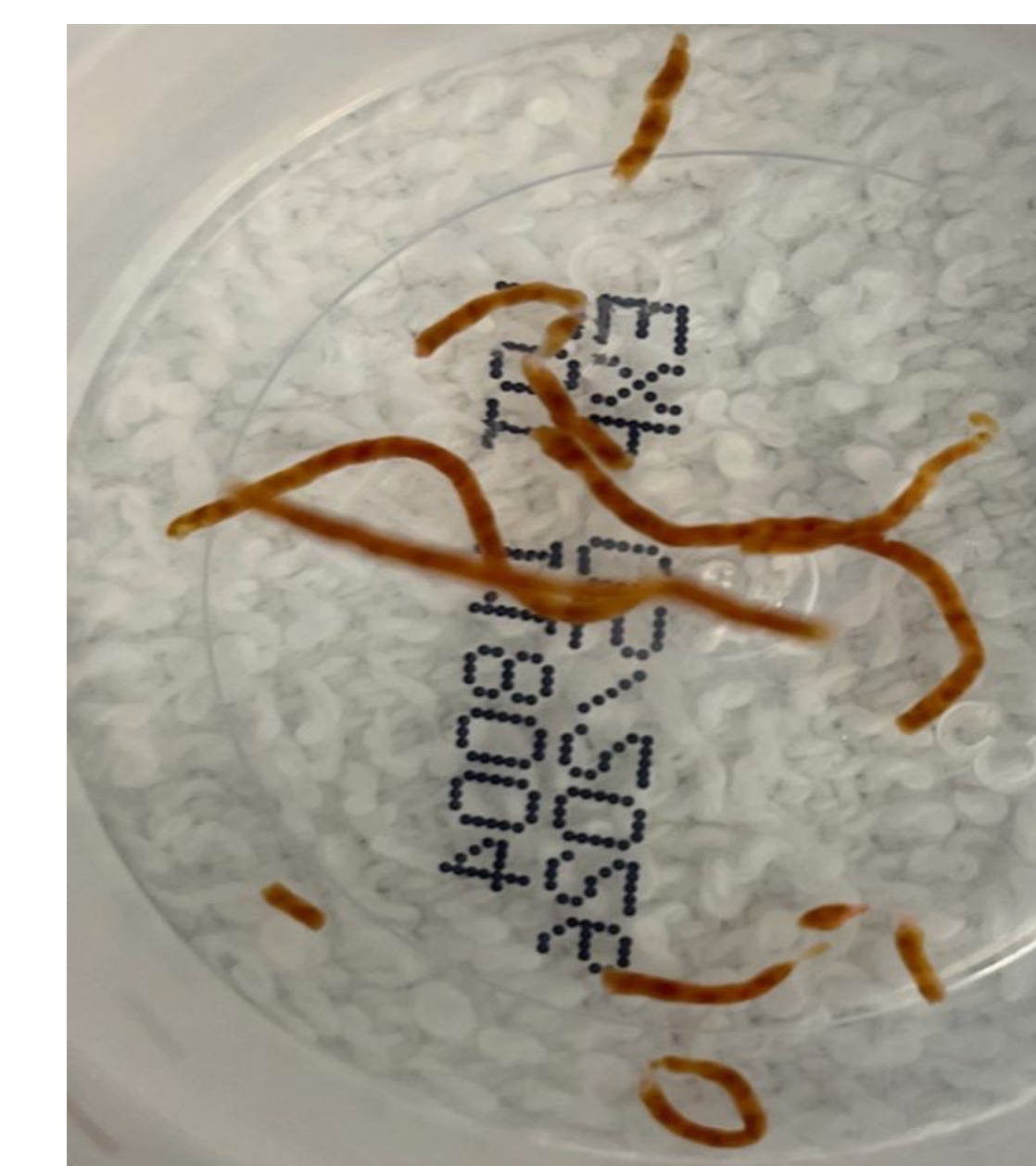
FNB needles: Franseen tip & Fork tip



ROSE (rapid on-site evaluation)



MOSE (macroscopic on-site evaluation)



## 2. Methods

- Multiple databases including MedLine, Embase, Scopus were searched from inception to Dec 2021.
- Standard meta-analysis methodology using random-effects model was used to calculate the pooled rates.
- Study heterogeneity was assessed by I<sup>2</sup>% values.
- Primary outcomes assessed were the diagnostic accuracy parameters.

## 3. Results

- 14 studies were included in the final analysis. 6 used FNB, 4 used non-FNB, 3 used combination
- 19G to 25G; 1 pass with FNB to 5 passes with other needles
- 45.8%: pancreatic mass; 22.1%: lymph nodes; 12.1%: submucosal lesions; 9.8%: other extra-pancreatic lesions
- MOSE definition: visible core with opacity, white/ yellow, red/ brown tissue with apparent bulk, 4mm in length (worm-like)

## 4. Conclusion

- Excellent pooled diagnostic parameters.
- ROSE vs MOSE needed to establish role of MOSE. *Scan the QR code for online full paper* →



	Pooled rates (95% confidence interval, I <sup>2</sup> %)		
	Any needle	ForkTip and/or Franseen needles	Other needles
Accuracy	91.3% (88.6-93.3, 66%)	90.6% (87.3-93.1, 46%)	92.7% (86.1-96.3, 81%)
Sensitivity	91.5% (88.6-93.6, 66%)	91.5% (88-94, 47%)	91.8% (85-95.7, 80%)
Specificity	98.9% (96.6-99.7, 80%)	98.2% (90.6-99.7, 81%)	98.5% (83.5-99.9, 83%)
PPV	98.8% (97.4-99.5, 33%)	98.7% (96.6-99.5, 0%)	98.7% (93.6-99.7, 55%)
NPV	55.5% (46.9-63.9, 95%)	63.1 (40.8-80.9, 93%)	66.7% (35.3-88.1, 97%)
Diagnostic yield	93% (87.7-96.1, 73%)	94.7% (88.4-97.7, 60%)	NA
Specimen quality (by pathologist assessment)			
– Good	84.9% (60.1-95.4, 91%) (4 cohorts)	NA	NA
– Poor	10.9% (3.6-28.8, 87%) (4 cohorts)	NA	NA
Adverse events	2.5% (1.5-3.9, 21%)	3.3% (1.9-5.5, 7%)	1% (0.3-2.8, 0%)
Other needles: (ProCore, Boston Expect, Echotip Ultra), PPV: positive predictive value, NPV: negative predictive value, NA: not applicable			