OPTIMISING EUS-FNB GUIDED TISSUE ACQUISITION: THE SIGNIFICANCE OF TRAP SCORE IN SOLID PANCREATIC AND GASTROINTESTINAL LESIONS FOR POSITIVE DIAGNOSTIC OUTPUT

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ABSTRACT SUBMISSION NUMBER AEK_OF024
BACKGROUND

- Endoscopic ultrasound-guided FNB tissue acquisition (EUS-FNB-TA) has revolutionized diagnostic approaches in gastroenterology related solid lesions.

- Accurate lesion localization, needle gauge, rapid on-site evaluation (ROSE), effective tissue core (>4mm) size, effective number of needles passes (such as >2 passes) are the requirement for the successful output.

- Furthermore, advanced age especially >60 also considered a risk factor for GI related malignancies.

- Keeping this in view, the purpose of this study was to develop the tool/score based on the important factors responsible for higher number of positive EUS-FNB-TA output.


To develop the TRAP score to predict the maximum EUS-FNB TA malignant output
METHODS

Data Collection:

• Retrospective study (Gastroenterology-department, Liaquat National Hospital).
• After institutional permission, gastrointestinal/pancreatic EUS-FNB data was collected from departmental EMR
• Consecutive data collected from Jan-2019 to July-2023.
• Abandoned procedures data were excluded.

Study Tool (TRAP SCORE)

A TRAP score was developed based on four parameters,

• Tissue size (T)
• Rapid onsite evaluation (R)
• Age (A)
• Number of needle passes (P)
METHODS

Scoring
- 1 = if tissue size > 4mm and 0 = if tissue size < 4mm
- 1 = if ROSE positive and 0 = if ROSE negative
- 1 = if age 60 years and above and 0 = if age < 60-year
- 1 = if number of needle passes > 2 and 0 if number of needle passes = 2 and below.
- Maximum score was “4” and minimum score was “0”

Statistical Analysis:
- Data was entered and analysed using SPSS version 25.
- ROC was plotted to determine the performance of TRAP score in prediction of malignant-cases and AUC was calculated.
- Sensitivity, specificity, positive and negative predictive values were computed at threshold of TRAP score of 3 and above.
RESULTS

- Total 122 EUS-FNB data (84/122, 69.9% malignant) was collected from EMR.
- Patients’ median age was 60-years (IQR=48-67) with males (59.8%) dominance.
- Pancreas was common biopsy site (73.8%).
- Malignant lesion was the output in 81.2% of patients with age >60 years, in 86.9% with >2 needle passes, in 88.9% of tissue size >4mm, in 93.1% of ROSE positive.
- Median TRAP score was 3 (IQR=2-4).
- ROC curve showed an AUC of 0.961 with statistical significance.
- At threshold of “TRAP score” of 3 and above, sensitivity, specificity were 83.3%, 100%.
- Positive and negative predictive value were 100% and 73.1% respectively.
Receiver operating characteristic curve for TRAP score taking Malignant lesion as gold standard

ROC Curve

Sensitivity

1 – Specificity

Diagonal segments are produced by ties.
TRAP SCORE AND BENIGN VS MALIGNANT LESIONS

Red Bars = Malignant Lesions and Blue Bars = Benign Lesions

TRAP SCORE

NUMBER of EUS–FNB CASES
DISCUSSION

EUS FNB is the technique making feasible the process of malignant tissue acquisition and diagnosis.

However, without following important technical aspect this process can be difficult.

TRAP score is based on the important factors required for successful EUS FNB guided TA and diagnosis.

This score can be useful for adequate EUS FNB TA and diagnosis. Despite that, we need further prospective studies to ensure its validity to establish its generalizability.
Conclusions:

• TRAP score can be useful tool for the predictability of maximum EUS-FNB-TA positive output in gastrointestinal and pancreatic solid lesions.

• Keywords:
  • TRAP score
  • ROSE
  • Tissue size
  • Needle passes