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Diagnostic utility of non-invasive test Enhance Liver Fibrosis (ELF) for detecting liver fibrosis in correlation with liver biopsy in morbidly obese patients undergoing bariatric surgery

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INTRODUCTION

- Preoperative detection of advanced liver fibrosis in obese patients undergoing bariatric surgery is important to
  - Plan ideal procedure
  - Stratify risk and prognosis and long term outcome
- Liver Biopsy: Gold standard for diagnosing fibrosis but invasive
- ELF panel, a serum-based non-invasive marker, measures fibrosis-related biomarkers and offers a promising alternative to liver biopsy.

AIM & OBJECTIVE

- To evaluate the diagnostic accuracy of ELF test in detecting advanced liver fibrosis in morbidly obese patients undergoing bariatric surgery

MATERIAL & METHODS

Fig 1. Flow Diagram for patient recruitment

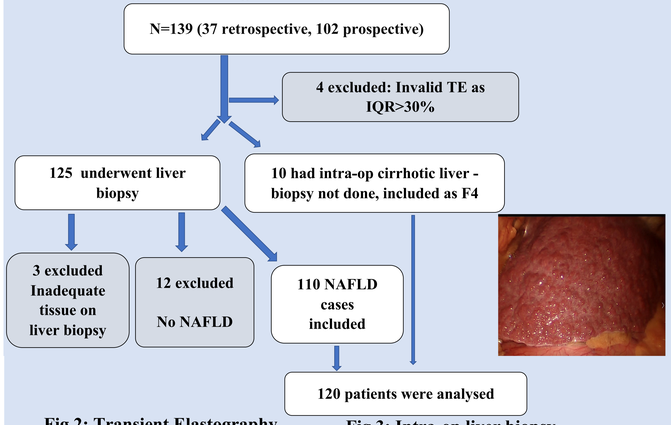


Fig 2: Transient Elastography



Fig 3: Intra-op liver biopsy



- This ambi-spective study was conducted in the Department of Surgical Disciplines at AIIMS, New Delhi between July 2022 to June 2024
- Patients who underwent bariatric surgery, were enrolled excluding the patients with liver disease
- All patients underwent standard work up including Fibroscan (transient elastography)
- Liver biopsy was performed using a disposable 16G trucut biopsy needle. Other Non-invasive scores (APRI, FIB4, NFS, FAST, FNI) were also calculated.
- 7 ml serum sample was taken on the day of surgery for ELF panel

RESULTS

- Female- 69.2%
- Mean age- 42.7 ± 12.0 year
- Mean BMI- 45.6 ± 8.4 kg/m²
- Lap Sleeve- 69.2%

Advanced Fibrosis (16.7%)
F3 (n=9)
F4 (n=11)

Fig 4: Fibrosis Stage

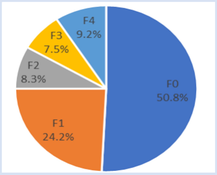


Table 1: Fibrosis staging in patients undergoing intra-op liver biopsy

Fibrosis Stage	n (110)	%
F0	61	50.8
F1	29	24.2
F2	10	8.3
F3	9	7.5
F4	11*(1 + 10 Visible Cirrhosis)	9.2

Fig 5: Comparison of ROC curves of non-invasive tests to detect advanced fibrosis

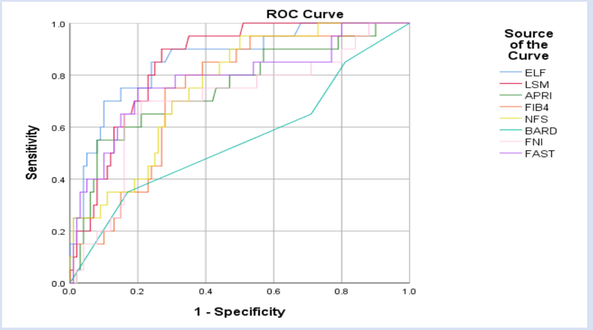


Table 2. Performance of ELF in comparison to other NIT

Advanced Fibrosis	Cut off	Sensitivity	Specificity	PPV	NPV	AUROC
ELF	**9.295**	**85**	**76**	**41.5**	**96.2**	**0.862**
LSM	10.35	90	73	40	97.3	0.850
APRI	0.5534	65	79	38.2	91.9	0.751
FIB4	1.0791	75	72	34.9	93.5	0.735
NFS	-0.2392	75	65	30	92.9	0.756
FAST	0.6782	75	80	42.9	94.1	0.781
FNI	0.6123	65	84	44.8	92.3	0.703

CONCLUSION

ELF panel with high AUROC and negative predictive values, is effective for ruling out advanced liver fibrosis and could reduce the need for liver biopsy in morbidly obese patients undergoing bariatric surgery and comparable to LSM

It is an promising tool to follow up these patients without need for follow up biopsy.