



PARIS MASH MEETING

10th edition

**Organized by
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**September 5 & 6 2024
Institut Pasteur, Paris**



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Case Study of MASLD in Middle East

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Case présentation

- 25 yrs old female .
- complaint: Recurrent Rt hypochondrial pain .
- No medical history of note.
- BMI 35 Kg/m2 .
- Lab results:
 - Hgb: 12.8
 - ALT: 16
 - AST: 14
 - Bilirubin total: 0.8
 - ALP: 66
 - GGT : 35
 - Albumin: 4.9
 - Autoimmune markers: Negative
 - Creatinine : 0.8
 - HBA1c : 4.2
 - INR: 1.1
 - Cholesterol : 239
 - TG : 160
- Imaging: U/S Calcular cholecystitis & bright echogenic fatty liver



Fibro scan (Echo sense)

➤ Transient elastography was considered reliable when the following criteria had been met:

- 10 successful measurements.
- An interquartile range (IQR) lower than 30% of the median value.
- A success rate of more than 60%. Liver stiffness was considered as the median of all valid measurements.
- Examination with the XL probe, with two experienced operators, was done.



- **Why Two Operators ?**



Chronic Hepatitis C Patients with Obesity: Do We Need Two Operators for Accurate Evaluation of Liver Stiffness?

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ABSTRACT

Introduction and aim. Transient elastography is gaining popularity as a non-invasive method for predicting liver fibrosis, but inter observer agreement and factors influencing reproducibility have not been adequately assessed. **Material and methods.** This cross-sectional study was conducted at Specialized Medical Hospital and the Egyptian Liver Foundation, Mansoura, Egypt. The inclusion criteria were: age older than 18 years and chronic infection by hepatitis C. The exclusion criteria were the presence of ascites, pacemaker or pregnancy. Three hundred and fifty-six patients participated in the study. Therefore, 356 pairs of exams were done by two operators on the same day. **Results.** The overall inter observer agreement ICC was 0.921. The correlation the two operators was excellent (Spearman's value $q = 0.808$, $p < 0.001$). Inter-observer reliability values were $\kappa = 0.557$ ($p < 0.001$). A not negligible discordance of fibrosis staging between operators was observed (87 cases, 24.4%). Discordance of at least one stage and

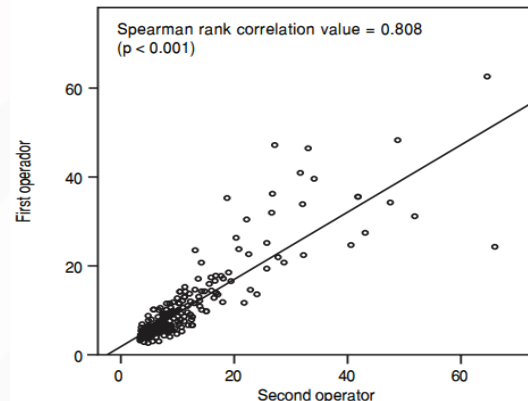


Figure 1. Correlation between the two liver stiffness measurements.

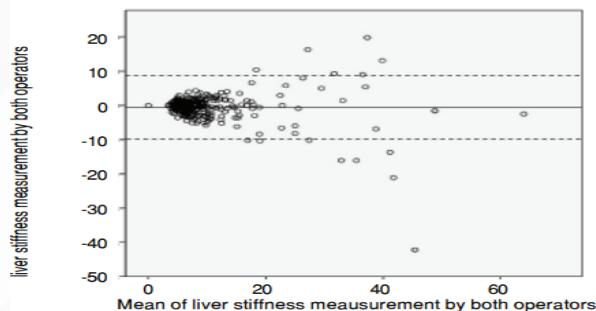


Figure 2. Bland and Altman plot. The solid line represents the mean of difference of LSM performed by both operators. The dashed lines define the limits of agreement (mean of LSM \pm 2SD).

- Obesity ($\text{BMI} \geq 30 \text{ kg/m}^2$) is the main factor associated with discordance ($p = 0.002$).

But With Two operators:

- The overall inter observer agreement ICC was 0.921.
- The correlation the two operators was excellent (Spearman's value $q = 0.808$, $p < 0.001$).

Laparoscopic wedge Liver biopsy

✓ METAVIR score: A1F1.

✓ Steatosis : S0 >>>> ?

➤ Steatosis was scored on 0-3 scale:

- grade 0 = <5%;
- grade 1 = 5%-33%;
- grade 2 = > 33%-66%;
- grade 3 = > 66% .



➤ **CAP S3 while Liver biopsy S0**

So, How can we explain this ???

➤ Liver biopsy in this case:

➤ Wedge Liver biopsy :

- More than 20 portal tracts
- Read by two expert hepato-pathologists

Fibro scan Cut offs

➤ Current CAP Cut off values:

- $S1 > 248$
- $S2 > 268$
- $S3 > 280$

➤ In our case we have $S3$ by CAP which is considered over diagnosed because biopsy is only $S0$

Do we need higher cut offs for CAP?

➤ We conducted a cross-sectional prospective single center study, to assess the diagnostic accuracy of CAP and LSM in comparison to liver histology.

Patients (n=636) who had laparoscopic cholecystectomy or sleeve gastrectomy at the Egyptian Liver Research Institute and Hospital (ELRIAH), Sherbin, El-Mansoura, Egypt.

May 2019 and May 2023.

Baseline Characteristics of 636 patients included in the study

	Laparoscopic cholecystectomy	Sleeve gastrectomy	All patients
Number with interpretable LB and FibroScan	508 (79.9%)	128 (20.1%)	636
Age	42.0 (34.0–51.0)	35.0 (29.0–44.0)	40.0 (33.0–49.0)
Gender			
– Male	94 (18.5%)	32 (25.0%)	126 (19.8%)
– Female	414 (81.5%)	96 (75.0%)	510 (80.2%)
BMI (kg/m ²)	33.5 (29.4–38.7)	40.6 (33.2–47.5)	34.6 (29.8–40.6)
ALT (IU/L)	18.9 (14.0–27.0)	15.0 (11.3–24.0)	18.0 (13.0–27.0)
AST (IU/L)	18.0 (15.0–22.0)	16.0 (13.0–21.0)	17.9 (14.5–22.0)
Alkaline phosphatase (IU/L)	78.0 (62.5–97.0)	72.0 (56.0–92.5)	76.0 (62.0–96.5)
Total Bilirubin (mg/dL)	0.59 (0.50–0.81)	0.59 (0.47–0.92)	0.59 (0.50–0.83)
Albumin (g/dL)	4.3 (4.1–4.5)	4.3 (4.1–4.5)	4.3 (4.1–4.5)
Platelets count (/cmm ³)	253.0 (208.5–299.5)	253.0 (208.5–308.7)	253.0 (208.5–301.5)
HgB (g/dL)	12.4 (11.6–13.3)	12.4 (11.7–13.5)	12.4 (11.6–13.3)
RBCs (/cmm ³)	4.8 (4.4–5.1)	4.7 (4.4–5.0)	4.7 (4.4–5.1)
WBCs (/cmm ³)	7.2 (5.6–9.3)	7.2 (5.3–9.7)	7.2 (5.5–9.5)
LSM (kPa), range 1.5–75 kPa	4.8 (3.9–6.0)	5.3 (4.2–7.4)	4.9 (4.0–6.1)
CAP (dB/m), range 100–400 dB/m	261.0 (218.0–301.0)	282.0 (206.8–339.3)	263.0 (215.5–309.0)
LB Fibrosis stage (METAVIR)			
F0	253 (49.8%)	81 (63.3%)	334 (52.5%)
F1	220 (43.3%)	43 (33.6%)	263 (41.4%)
F2	24 (4.7%)	3 (2.3%)	27 (4.2%)
F3	8 (1.6%)	0 (0.0%)	8 (1.3%)
F4	3 (0.6%)	1 (0.8%)	4 (0.6%)
LB Steatosis stage			
S0	411 (80.9%)	46 (35.9%)	457 (71.9%)
S1	78 (15.4%)	53 (41.4%)	131 (20.6%)
S2	17 (3.3%)	26 (20.3%)	43 (6.8%)
S3	2 (0.4%)	3 (2.3 %)	5 (0.8%)

Diagnostic performance of CAP for steatosis grades depending of current cut-off values:

	S \geq S1 (\geq 5% steatosis)	S \geq S2 (\geq 34% steatosis)
Cutoff #	248	268
Se (95% CI)	0.730 (0.661-0.790)	0.766 (0.523-0.864)
TP/(TP+FN)	130/178	36/47
Sp (95% CI)	0.490 (0.445-0.536)	0.563 (0.523-0.603)
TN/(TN+FP)	223/455	330/586
PPV (95% CI)	0.359 (0.311-0.410)	0.123 (0.090-0.166)
NPV (95% CI)	0.823 (0.773-0.864)	0.868 (0.943-0.982)
LR+ (95% CI)	1.432 (1.412-1.453)	1.753 (1.711-1.796)
LR- (95% CI)	0.550 (0.523-0.578)	0.416 (0.346-0.499)
Diagnostic Accuracy	0.558 (0.519-0.596)	0.578 (0.539-0.616)

OPEN

Higher cut-off values of non-invasive methods might be needed to detect moderate-to-severe steatosis in morbid obese patients: a pilot study

Daniella Braz Parente^{1,2,3}, Hugo Perazzo³, Fernando Fernandes Paiva⁴, Carlos Frederico Ferreira Campos⁵, Carlos José Saboya⁶, Silvia Elaine Pereira⁶, Felipe d'Almeida e Silva¹, Rosana Souza Rodrigues^{1,2} & Renata de Mello Perez^{1,2,5}

To evaluate the diagnostic value of described thresholds of controlled attenuation parameter (CAP) and biomarker scores for liver steatosis and to evaluate new cut-offs to detect moderate-to-severe steatosis (S2–3) in patients with morbid obesity. In this prospective study, 32 patients with morbid

They proposed cut-offs for detection of $> S2$ for CAP (≥ 314 dB/m)

➤ **We concluded from our work that :**

- S1 should be **290** dB/m NOT **248**
- S2 should be **317** dB/m NOT **268**

➤ Home take messages:

- There is a discordance between CAP and liver biopsy when using the current cut off values of CAP , suggesting a potential overestimation of steatosis by CAP in many cases.
- There is a need for revised CAP cut-off values for patients with high BMI to improve diagnostic accuracy
- Further studies are needed to define CAP cut-off values across larger populations of different ethnic backgrounds .

Thank You



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