FRI-428

Comparison of ElastPQ Shear-wave Elastography (ElastPQ-SWE) and FibroScan Transient Elastography (F-TE) for liver fibrosis staging in patients with NAFLD

Davide Roccarina[1], Laura Iogna Prat[1], Marta Guerrero[1], Elena Buzzetti[1], Matteo Rosselli[1], Massimo Pinzani[1], Emmanuel Tsochatzis[1]

[1]UCL Institute of Liver and Digestive Health, Sheila Sherlock Liver Centre, Royal Free Hospital, London, United Kingdom

Email: daviderocarina@gmail.com

Background and Aims: Shear wave Elastography with ElastPQ (ElastPQ-SWE) is a recently introduced elastography-based technique for non-invasive fibrosis assessment.

We compared liver stiffness evaluation by ElastPQ-SWE and Fibroscan (F-TE) in a cohort of consecutive patients with NAFLD. We further evaluated the performance of ElastPQ-SWE in a subgroup of patients with available histology.

Method: Anthropometric parameters (weight, height, BMI and waist circumference (WC)) were measured together with routine bloods including a lipid profile. Transient elastography (TE) was measured by FibroScan (Echosens) and ElastPQ-SWE (Affiniti 70G, Philips) in all recruited patients.

Results: We enrolled 319 consecutive patients with NAFLD, mean age 54±13y, BMI 31.7±5.8 kg/m2, waist circumference (WC) 107±15 cm, 56.3% male, 44% with diabetes, 55.7% hypertension, 81% hyperlipidaemia.

ElastPQ had a good correlation with F-TE (Spearman's=0.740, p<0.0001), which was better for mild and moderate stages of fibrosis (Fig.1). A ≥2 kPa difference between the two techniques was found in 89 patients. On the univariate analysis predictors of such a difference were diabetes (p=0.004), BMI (p=0.032), AST (0.021) and F-TE ≥ 10 kPa (p<0.0001) compatible with advanced fibrosis. On the multivariate analysis the only independent predictor was F-TE ≥ 10 kPa (OR: 6.891, 95% CI 3.538-13.422, p<0.0001).

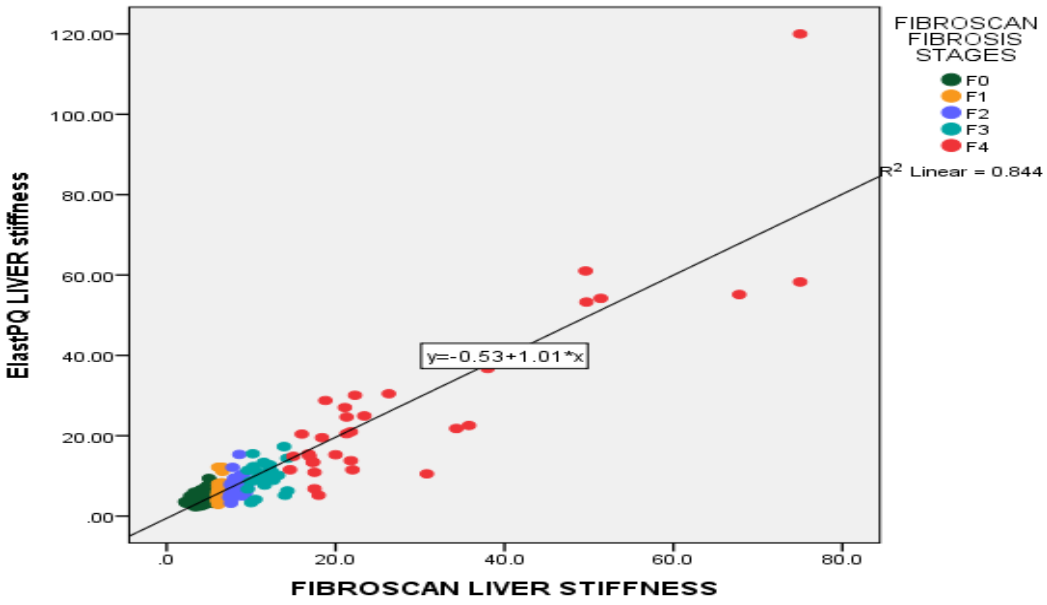
In the subgroup of 112 patients with available histology, the distribution of fibrosis was as follow: F0=14 (12%), F1=40 (36%), F2=21 (19%), F3=17 (15%), F4=20 (18%).

The optimal cut-off values of ElastPQ-SWE for individual stages of fibrosis were lower than those of F-TE. ElastPQ showed the same diagnostic performance for F≥2 and a better diagnostic performance for F≥3 and F4 compared to F-TE (Table 1).

	ElastPQ				**FIBROSCAN**			
	Cut-off (kPa)	***Sensitivity (%)***	***Specificity (%)***	***AUC***	***Cut-off (kPa)***	***Sensitivity (%)***	***Specificity (%)***	***AUC***
F≥2	6.8	81	76	0.855	7.9	82	72	0.810
F≥3	8.2	89	82	0.927	10.1	76	83	0.878
F4	12.5	100	93	0.992	13.2	86	87	0.935

Conclusion: ElastPQ and F-TE showed a good correlation in patients with NAFLD, which is better for low values of liver stiffness. The optimal cut-off values of ElastPQ are lower than those of F-TE for individual stages of fibrosis. ElastPQ seems to have a better diagnostic accuracy than F-TE in diagnosing advanced fibrosis and cirrhosis but this finding needs to be confirmed in larger cohorts.

Figure: Fig.1


ElastPQ LIVER stiffness
120.00
100.00
80.00
60.00
40.00
20.00
.00
.0
20.0
40.0
60.0
80.0
FIBROSCAN LIVER STIFFNESS
y=-0.53+1.01*x
FIBROSCAN FIBROSIS STAGES
F0
F1
F2
F3
F4
R2 Linear = 0.844