A novel non-invasive Fibroscan®-based tool for the detection of hepatic steatosis in overweight and obese patients

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Introduction: Steatosis designates the intracellular accumulation of fat in the liver. Its prevalence is around 70% obese and 90% in severely obese patients. In obese patients steatosis is often associated with inflammation and fibrosis (Steato-Hepatitis, SH) which may silently progress until cirrhosis. The gold standard for fibrosis and steatosis assessment is Liver Biopsy (LB). Non invasive methods are needed differentiate steatosis from SH in obese patients. The Fibroscan® is Vibration Control Transient Elastography device used to non-invasively assess liver fibrosis. A novel Controlled Attenuation Parameter (CAP) has been developed to diagnose steatosis. The aim of this work is to validate the CAP in patients suffering from SH.

Methods: 61 overweight and obese patients (25≤BMI≥40) with SH who underwent LB were included. Steatosis was graded by the same pathologist as: S0: steatosis in less than 11% of hepatocytes, S1: 11~33%, S2: 34~100%. Repartition of patients in each grade was 20%, 25%, 56%, respectively.

Results: CAP was correlated to the steatosis (ρ=0.59, $p<10^{-6}$). Its performance evaluated in terms of AUROC is summarized the Table.

	S0vsS1S2	S0S1vsS2
AUROC* (95% CI)	0.82 (0.70~0.93)	0.84 (0.74~0.94)

*Area under Receiver Operating Curve

Table

Conclusion: The novel CAP can be used to detect steatosis in overweight and obese patients. Furthermore, its performance is good for the diagnosis of severe fibrosis and excellent for cirrhosis (data not shown). Clinical validation in a large cohort of obese patient is ongoing. Combination of both fibrosis and steatosis detection using the Fibroscan® might differentiate simple steatosis from SH in obese patients.