Disease Severity in Non-alcoholic Fatty Liver Disease (NAFLD) Patients with No Prior Diagnosis of Cirrhosis – A Unique Insight Using Vibration-Controlled Transient Elastography (VCTE)

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Background and Hypothesis:

The severity of fibrosis is a strong prognostic indicator in patients with non-alcoholic fatty liver disease (NAFLD). However, routine evaluation with a liver biopsy in patients with NAFLD is not feasible and as such, the assessment of disease severity is often limited in small sample sizes. Vibration-controlled transient elastography (VCTE) is a non-invasive tool that can simultaneously assess for both liver fibrosis and steatosis by estimating liver stiffness measurement (LSM) and controlled attenuation parameter (CAP) respectively. The aim of the current study is to estimate the prevalence of (1) abnormal LSM indicative of any fibrosis based on LSM ≥ 6.5 kPa, (2) compensated Advanced Chronic Liver Disease (cACLD) – suggestive(10-15kPa) and highly suggestive (>15 kPa), and (3) severe steatosis

Experimental Design or Project Methods:

Patients seen at digestive and liver disorders clinic at Indiana University Hospital that underwent VCTE between 8/2013-4/2018 were identified from the Fibrocan502 Touch data table. The ICD10 codes used as the indication for performing the VCTE were extracted and confirmed with the review of electronic health records.

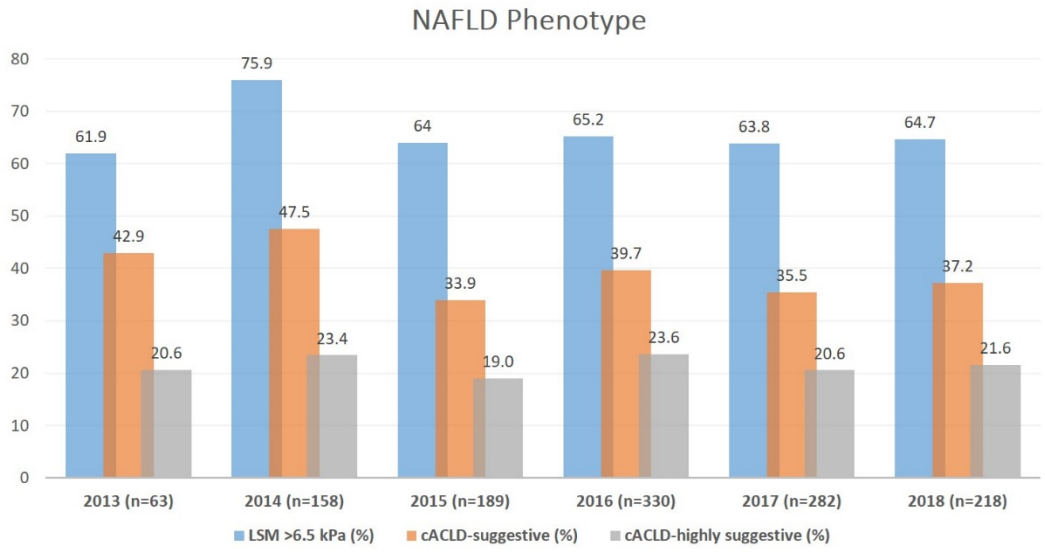
Results:

1240 patients met the criteria. The prevalence of abnormal LSM in the study cohort was 66% with 38.5 % having LSM suggestive of cACLD and 22% having LSM highly suggestive of cACLD. The prevalence of severe steatosis was 77%. The proportion of NAFLD patients with cACLD (suggestive and highly suggestive) during the study period was not significantly different (Figure1).

Conclusion and Potential Impact:

There are many NAFLD patients with liver stiffness indicative of abnormal LSM and 22% have LSM that is highly suggestive of cACLD. The proportion of patients with cACLD is steady over the study duration.

Figure 1


NAFLD Phenotype
80
70
60
50
40
30
20
10
0
61.9
42.9
20.6
75.9
47.5
23.4
64
33.9
19.0
65.2
39.7
23.6
63.8
35.5
20.6
64.7
37.2
21.6
2013 (n=63)
2014 (n=158)
2015 (n=189)
2016 (n=330)
2017 (n=282)
2018 (n=218)
LSM >6.5 kPa (%)
cACLD-suggestive (%)
cACLD-highly suggestive (%)