Effectiveness of ALT in predicting fibrosis among patients with nonalcoholic fatty liver disease

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Premise

- Approximately 25% of the US population has nonalcoholic fatty liver disease (NAFLD), of which about 10% will go on to develop nonalcoholic steatohepatitis (NASH) with fibrosis.[3]
- Age, diabetes mellitus (DM), impaired fasting glucose (IFG), and metabolic syndrome are known risk factors for fibrosis.[3]
- The NAFLD Fibrosis Score (NFS) is a noninvasive equation which combines biochemical and clinical predictors of fibrosis risk in nonalcoholic fatty liver disease.[1]
- Compared to serum ALT levels, the use of non invasive diagnostic assessment tools such as the NFS may better identify high-risk patients who would benefit from referral to hepatology.[2]

Methods

- Study was a single-center retrospective cohort of CPMC employees and referred NAFLD patients.
- All participants took part in the CPMC Healthy Beverage Initiative (described elsewhere).
- Patients were excluded from the study if they had insufficient data to calculate NFS.
- Statistical analysis was conducted using Independent Samples t-test.

Keywords

NAFLD Screening, NASH, Fibrosis risk, ALT, Fibroscan, Metabolic Syndrome

Results:

- 306 subjects: 37.3% Caucasian, 33.0% Asian, 9.8% African American, 6.2% Native Hawaiian or Pacific Islander, 2.9% American Indian or Alaska Native, 7.5% Other
- 25.2% of the cohort had DM or IFG; 31.0% were over the age of 50.
- There was no difference in serum ALT levels between patients at indeterminate or low risk (NFS<0.675) and high risk (NFS>0.675) for advanced fibrosis, p>0.05.
- For every component of metabolic syndrome, NFS increased by a mean 0.5 points (Figure 2).
- When using Fibroscan to define advanced fibrosis in a subgroup of 48 subjects, the negative predictive values were similar for ALT (86%) and NFS (79%).

Figure 1: Distribution of FibroScan scores

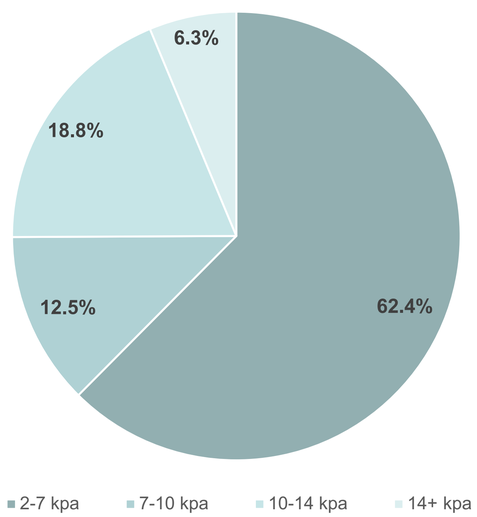
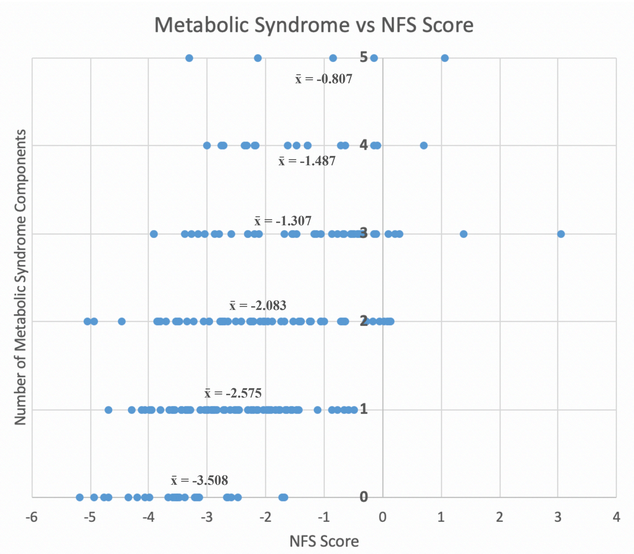


Figure 2: Number of Metabolic Syndrome components against average NFS Score



Conclusions

- **While not as high as in some studies, we found that NFS was able to identify patients at low risk for advanced fibrosis with a nigh negative predictive value.**
- **Use of the liver enzyme ALT alone should not be used to predict risk of fibrosis in patients with NAFLD.**
- **Metabolic syndrome components, many of which are known risk factor for NASH with fibrosis, showed a positive correlation with the NAFLD fibrosis score.**
- **In a subgroup of 48 patients with FibroScan, patients with early stage fibrosis (<7 kPa) outnumbered those with significant fibrosis (≥7 kPa) by a ratio of nearly 3:1, highlighting the large proportion of low-risk patients referred to hepatology clinic for further diagnostic assessment.**

References

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Disclosures

None of the authors have any relationships to disclose.

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