BACKGROUND & AIMS

There is an urgent need for novel, non-invasive methods to diagnose NASH and monitor disease evolution. We have previously reported composite algorithms referred here as NIS including variables (2-macroglobulin, mir34a and mir200a in plasma, PNP, YKL-40 (CHI3L1), HbA1c) with good diagnostic performances to detect patients To-Be-Treated (NAS≥4;F≥2).

Using samples from GOLDEN-505 cohort and measuring serum levels of mir34a, a similar linear logistic regression approach has generated a simplified algorithm (referred here as NIS4) with 4 circulating variables (2-macroglobulin, mir34a in serum, YKL-40 and HbA1c).

The main objectives of this study were to:

- Assess relationships of NIS4 with histological lesions at inclusion in GOLDEN-505.
- Investigate the potential of NIS4 for the monitoring of histological changes at 1 year.

METHODS

- NASH patients (NAS≥3; ≥1 in steatosis, inflammation and ballooning) included in GOLDEN-505 trial (N=238).
- correlations between change in NIS4 and change of histological scores at week52 vs baseline.
- Correlations of baseline NIS4 with baseline histological scores. For this analysis, patients were grouped considering only patients with NAS≥4.

CONCLUSIONS

This study reports the diagnostic performance of a new non-invasive score combining circulating levels of four variables: 2-macroglobulin, mir34a, HbA1c and YKL-40 (CHI3L1).

- Compared to existing scores, NIS4 can efficiently identify patients To-Be-Treated (NAS≥4;F≥2).
- The diagnostic performance of NIS4 is driven by correlations with Activity index (macro-inflammation) and liver fibrosis stage at baseline. In contrast NIS4 does not correlate with steatosis score.
- Changes in NIS4 are correlated with changes in Activity index with weaker correlations with change in steatosis and fibrosis stage.
- Together these results suggest that NIS4 holds promise for identification of patients To-Be-Treated and for monitoring disease activity.

Diagnostic and disease monitoring performance of NIS4 should be further explored in independent longitudinal cohorts.