# Kallistatin, IL-10, IL-1β and hsCRP in the diagnosis of non-alcoholic fatty disease on the background of hypertension

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## BACKGROUND

Non-alcoholic fatty liver disease (NAFLD) affects 25% of the adult population and often develops in comorbidity with hypertension (HT).

**25%**

ROC-analysis allow to assess the diagnostic potential of biomarkers for liver fibrosis detection in NAFLD patients.

## OBJECTIVE

To evaluate the kallistatin (KS), IL-10, IL-1β and hsCRP role in determining of development and progression of liver fibrosis in NAFLD and HT patients.

## METHODS

63 patients with NAFLD on steatohepatitis stage and HT and 52 patients with isolated NAFLD were observed. Kallistatin, IL-10, IL-1β and hsCRP levels were determined by enzyme-linked immunosorbent assay.

■ NAFLD + HT
■ NAFLD

45%

**115**

55%
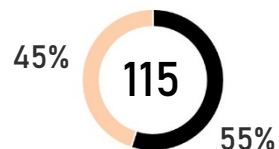
## RESULTS

The kallistatin showed significant potential in diagnosing the occurrence and progression of liver fibrosis in patients with NAFLD and HT and with isolated NAFLD.
IL-10 and IL-1β showed good prognostic characteristics for liver fibrosis progression detection in both groups of patients, and the hsCRP revealed prognostic abilities only in NAFLD and HT patients (table 1).

Table 1. Characteristics of ROC curves for the determination of biomarkers in the examined patients

| | Marker | AUC | Sensitivity | Specificity | p |
|---|---|---|---|---|---|
| **NAFLD + HT** | KS | 0.975/0.881 | 95%/95% | 100%/77% | 0.003/<0.001 |
| | IL-10 | 0.772/0.710 | 75%/70% | 75%/64% | 0.314/0.009 |
| | IL-1β | 0.600/0.752 | 90%/72% | 50%/75% | 0.535/0.002 |
| | hsCRP | 0.725/0.849 | 95%/80% | 75%/85% | 0.163/<0.001 |
| **NAFLD** | KS | 0.867/0.889 | 77%/92% | 81%/83% | 0.001/<0.001 |
| | IL-10 | 0.562/0.769 | 81%/94% | 35%/69% | 0.518/0.012 |
| | IL-1β | 0.517/0.788 | 71%/85% | 48%/67% | 0.860/0.007 |
| | hsCRP | 0.601/0.652 | 65%/69% | 52%/56% | 0.291/0.155 |

Simultaneous determination of all biomarkers allowed to predict the occurrence and progression of liver fibrosis in NAFLD and HT (AUC=1.000, p=0.002, Se=100%, Sp=100%; AUC=0.874, p<0.001, Se=82.1%, Sp=85.0%), and isolated NAFLD patients (AUC=0.874, p<0.001, Se=94.1%, Sp=71.4%, AUC=0.889, p <0.001, Se=84.6%, Sp=94.4%) (fig.1).
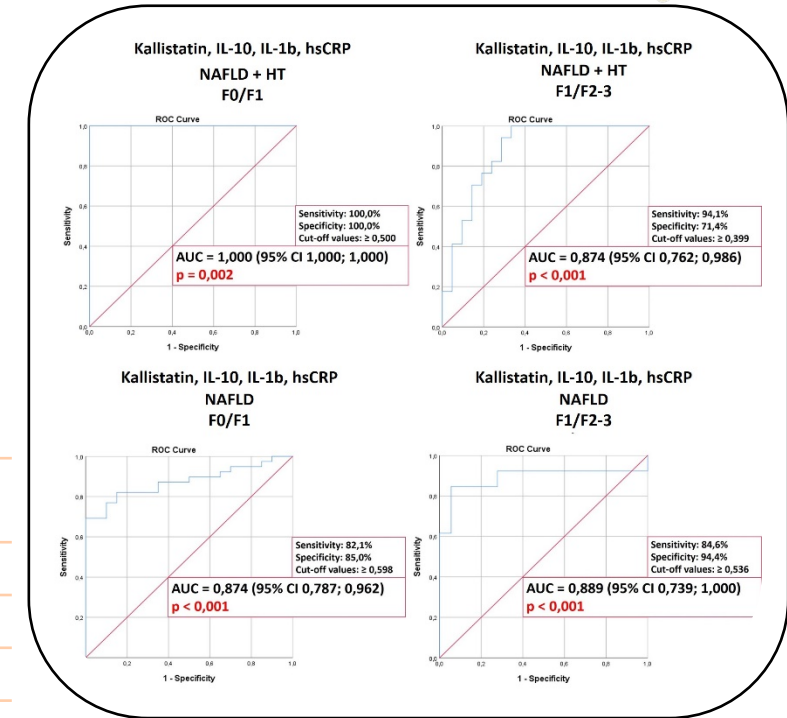


Figure 1. Characteristics of ROC curves for the simultaneous determination of all biomarkers

## CONCLUSIONS

Kallistatin, IL-10, IL-1β, and hsCRP levels determination can detect liver fibrotic changes in NAFLD and HT patients may be an alternative to invasive diagnostic methods.