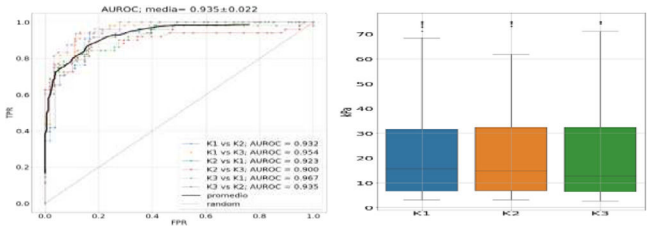

Figures 1 and 2.
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Liquid biopsy of patients with advanced liver fibrosis reveals the association of methylation in CpGs and miRNAs expression with the degree of severity

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Introduction and Objective: This study aimed to assess whether the expression of specific miRNAs and the percentage of DNA methylation of the Peroxisomal Proliferator-Activated Receptors (PPAR) α, γ and δ genes in tissue and liquid biopsy from patients with advanced liver fibrosis (F3 and F4) is associated to the degree of severity.

Materials and methods: Transjugular liver biopsy and liquid biopsy were collected from 23 patients with sustained viral response to the hepatitis C virus, with advanced residual fibrosis (F3 and F4). The percentage of methylation in CpG islands of the promoters of the PPARα, PPARγ and PPARδ genes and the expression levels of miRNAs were determined. Masson's trichrome hematoxylin-eosin staining was performed. DNA was extracted from tissues and plasma, and percent methylation was measured by pyrosequencing. Extraction and isolation of miRNAs from liver tissue were performed: miR-21, miR-34, miR-122, miR181b, miR192, miR-200a/b and their expression level compared to miR-16 was evaluated. The trial was approved by the research ethics committee, and informed consent was obtained.

Results: Higher promoter methylation percentages were observed in patients with more severe degrees of fibrosis (F4), both in tissue and in liquid biopsy. In addition, overexpression of miRNAs was associated with the degree of fibrosis.

Discussion: Epigenetic mechanisms (DNA methylation and microRNA expression) regulate the expression of multiple genes and their status may be a biomarker associated with the degree of fibrosis.

Conclusion: Liquid biopsy is an effective and accessible method for evaluating the degree of fibrosis.

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Increase in liver fibrosis in patients with inflammatory bowel disease at the inflammatory bowel disease clinic, *Centro Medico Nacional 20 de noviembre*

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Introduction and Objective: To determine the progression to liver fibrosis secondary to non-alcoholic fatty liver disease (NAFLD) by non-invasive methods in patients with Inflammatory Bowel Disease (IBD).

Material and Methods: Descriptive, cross-sectional, and retrospective study. Variables analyzed: age, sex, type of IBD, treatment, Fibrosis-4 (FIB-4) and NAFLD fibrosis score (NFS). The SPSS version 25 program was used, with univariate analysis, 95% CI and significant $P < 0.05$.

Results: Of 125 patients, 88 (70.4%) had chronic nonspecific ulcerative colitis (UC) and 37 (29.6%) had Crohn's disease (CD). NAFLD was found in 20 patients (16%), with fibrosis in 20% (4 patients), as well as cirrhosis (20%) without statistical significance (Table 1). Grade F0-F2 (NFS<1.455) was more frequent in both groups, with no significant correlation with IBD. Ustekinumab correlated with NAFLD without fibrosis ($P<0.05$), while mesalazine correlated significantly with liver fibrosis (F3-F4).

Discussion: NAFLD occurs in 50% of patients with IBD. The pathogenesis includes, on the one hand, the release of cytokines and adipokines that lead to increased inflammation and hepatic fibrosis and, on the other, altered intestinal permeability, with the consequent hepatic fatty infiltration. For its diagnosis, non-invasive tools were created, such as NFS and FIB-4, with the best predictive value for advanced liver fibrosis.

Conclusions: The occurrence of NAFLD and progression to fibrosis were significantly correlated with the treatment of the underlying disease.

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