however, only TNF- α had a significant decrease. No histological changes were observed in the study groups

Discussion: Caffeine treatment was shown to have a hepatoprotective effect against IR injury, possibly because it is a non-selective antagonist of the adenosine receptor. It has previously been shown that, in the liver, an extracellular increase in adenosine followed by its binding to its A2 receptor, serves to signal an increase in nitric oxide synthesis, which was associated with a cytoprotective effect against IR injury.

Conclusions: Caffeine was shown to have a hepatoprotective effect against IR liver injury

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.

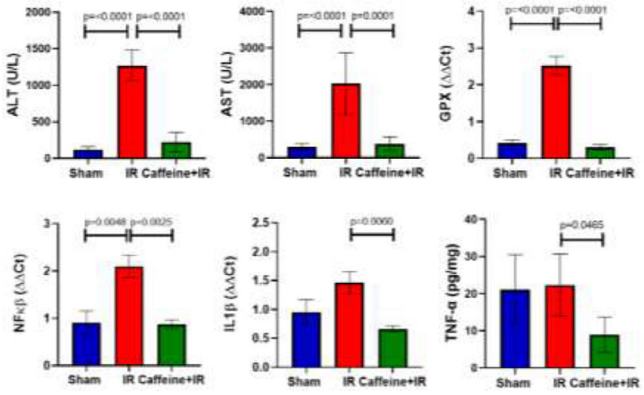

Figure 1.
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Evaluation of the hypolipidemic effect of cinnamon essential oil in a model of acute damage induced by triton WR-1339

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Introduction and Objective: To evaluate the lipid-lowering activity of cinnamon essential oil in a model of acute hyperlipidemia induced by Triton WR-1339 in Wistar rats.

Material and methods: Male and female Wistar rats 250-350g were divided randomly into five groups of six rats: Normal control group (SHAM), hyperlipidemic group (HL), non-toxicity cinnamon group (NO TOX), cinnamon essential oil + Triton WR-1339 group (AEC), atorvastatin treatment group (ATORV).

Orogastric administration was performed for seven days and subsequently, triton or vehicle was administered intraperitoneally for 24 hours before undergoing sacrifice. The non-toxicity of cinnamon essential oil at a concentration of 200mg/kg, biochemical markers, proinflammatory cytokines and expression of genes associated with oxidative stress and inflammation were evaluated. The trial was approved by the research ethics committee.

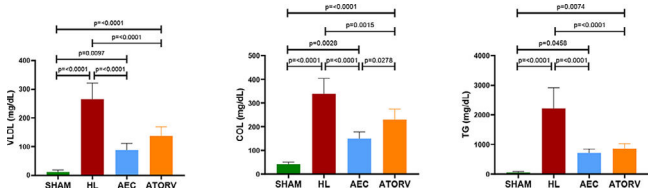
Results: No increase in liver enzymes was observed in rats from the group of non-toxicity. Cinnamon essential oil administration significantly reduced cholesterol (COL), triglycerides (TG), and VLDL levels. Regarding the measurement of proinflammatory cytokines and expression of genes related to oxidative stress and inflammation, no effect was observed on these parameters at the evaluated dose of cinnamon essential oil.

Discussion: Cinnamon essential oil treatment showed a significant reduction in COL, TG and VLDL levels, displaying a higher effectivity than atorvastatin. The non-significant results in the levels of cytokines and expression of genes related to oxidative stress and inflammation could be attributed to the acute damage model employed; had more time been given to the model, said makers might have been activated.

Conclusions: The hypolipidemic activity of cinnamon essential oil was demonstrated to be more effective than atorvastatin.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.



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The gut microbiota and key parameters associated with MAFLD are modified by MEXMIX

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Introduction and Objective: This study aimed to evaluate the effect of the supplementation of a mixture of Mexican functional foods: Optuna ficus indica, Theobroma cacao and edible crickets (MexMix) over a diet high in fat and fructose-sucrose in a mice model.

Materials and methods: Eighteen male C57BL/6J mice were divided into three groups. Control group: Normal diet (ND). HF Group: High-fat diet and 42% fructose-sucrose water ad libitum. Therapeutic group (MexTHER): HF-diet up to week eight and switch to 8 additional weeks of HF-diet supplemented with 10% nopal, 10% cocoa and 10% cricket. The trial was approved by the research ethics committee.

Results: MexTHER group reduced body weight, liver weight, visceral fat, and epididymal fat compared to HF; as well as; serum levels of triglycerides, cholesterol, LDL, insulin, glucose, GIP, leptin, PAI-1 and resistin. Through 16S rRNA gene sequencing analysis, we found that MexMix consumption increased the abundance of Lachnospira, Eubacterium coprostanoligenes group and Blautia. Besides, the genus Lachnospira showed significantly negative correlations with weight, epididymal fat, serum leptin, cholesterol and AUC-ITT, while Muribaculaceae and Akkermansia genus had a positive correlation with serum PAI-1, resistin, insulin and body weight; and Grammaproteobacteria class had a positive correlation with body weight and levels of cholesterol and LDL.

Discussion: Supplementation with MexMix improves biochemical parameters and enriches beneficial bacterial genus in MAFLD models.

Conclusion: MexMix supplementation is an attractive nutraceutical strategy for the treatment of diseases associated with excessive consumption of fat and sugar, such as MAFLD.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.

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Serum determination of IL-1β and IL-1RA in patients with chronic liver diseases

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Introduction and Objectives: This study aimed to evaluate serum concentration of IL-1β and IL-1RA in subjects with alcoholic liver disease (ALD), chronic hepatitis C (CHC) and non-alcoholic fatty liver disease (NAFLD).

Materials and methods: A cross-sectional and multicenter study was carried out, which included alcoholic subjects (OH), alcoholic cirrhosis (CiOH) and alcoholic hepatitis (HA); patients with CHC and NAFLD were compared against subjects without criteria for alcohol drinking habits (CT). IL-1β and IL-1RA were quantified by Multiplex-MERCK©. For statistical analysis SPSS V.22 were used, Mann-Whitney U, $p<0.05$; values expressed as mean ± standard error.

Results: The groups included were: 18 (OH), 25 (CiOH), 14 (HA), 55 (CHC), 22 (NAFLD) and 81 (CT). IL-1β results (pg/mL): 13.8±9.2, OH; 4.4±1.7, CiOH; 3.05±0.05, HA; 7.1±2.3, CHC; 5±2, NAFLD and 3.2±0.1, CT. With differences in HA vs. CHC. For IL-1RA (pg/mL) 83.5±30, OH; 100.4±53.5, CiOH; 85±38.3, HA; 74.4±2, CHC; 316±203, NAFLD and 13.02±4.4, CT. With differences in CHC and NAFLD vs. CT and CiOH vs. CHC.

Discussion: IL-1β was 2.3 times increased in HA/CHC, which highlights the effect on exacerbating the inflammatory response in acute over chronic alcohol damage; IL-1RA that inhibits the activities of IL-1β are increase may have protective effects on liver injury.

Conclusion: IL-1RA is a cytokine that limits inflammation in liver disease, especially in non-alcoholic fatty liver disease, alcoholic cirrhosis and chronic hepatitis C.

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Declaration of interest: The authors declare no potential conflicts of interest.

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Evaluation of IL-12 and CXCL-10 in patients with hepatitis C, non-alcoholic fatty liver disease and liver damage for alcohol consumption

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Introduction and Objectives: To Compare serum levels of IL-12 and CXCL-10 in different etiologies of liver disease.

Materials and methods: A cross-sectional and multicenter study was carried out, including subjects with alcoholism according to criteria WHO, without (OH) and with liver injury (cirrhosis, CiOH) and (Alcoholic Hepatitis, HA); non-alcoholic fatty liver (NAFLD) and chronic Hepatitis C (CHC), diagnosed by clinical, biochemical data. They were compared with subjects control (CT). For determination of IL-12 and CXCL-10 with Multiplex®-MERCK©. Statistical analysis by SPSS V.22 using U de Mann Whitney, $p<0.05$; values expressed as mean ± standard error.

Results: Included 20 subjects with NAFLD, 78 CHC, 14 HA, 20 CiOH, 15 OH y 60 CT. IL-12 was found elevated in OH, HA, CHC vs. CT in OH vs. HCc y HGNA ($p\leq0.05$). CXCL-10 was found elevated in CiOH, HA and CHC vs. CT($p\leq0.050$).

Discussion: The IL-12 showed elevated levels in subjects with alcohol consumption and CHC vs. CT that activates other cell types involved in inflammation. CXCL-10 is induced by IFN-γ, was found elevated in CiOH, HA and CHC, exerting their biological effects through CXCR3, including activation of peripheral immune cells and apoptosis. The ratio of IL-12/CXCL-10 in OH increased 4.6 times, ratifying the participation in chronic and continual inflammatory response by alcohol consumption.

Conclusions: IL-12 and CXCL-10 have an important role in alcohol-induced liver disease, confirming their contribution to inflammation, being evident CXCL-10 in advanced stages of the disease, by stimulating and favoring the migration of immune cells to the damage sites.

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Declaration of interest: The authors declare no potential conflicts of interest.

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