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

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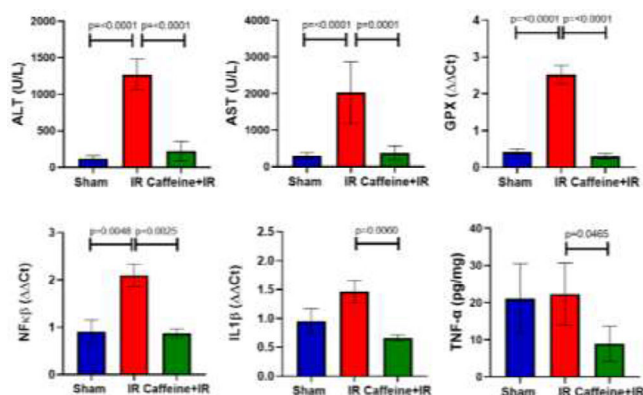

Figure 1.
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Evaluation of the hypolipidemic effect of cinnamon essential oil in a model of acute damage induced by triton WR-1339

JM De la Rosa-García, P Cordero-Pérez,
CA Jimenéz-Torrés, D Garza-Guzman,
GR Govea-Torres, DR Rodríguez-Rodríguez,
L Torres-González, LE Muñoz-Espinosa,
DP Moreno-Peña

Liver Unity. Department of Internal Medicine. Universitary Hospital "Dr. José E. González". Nuevo León Autonomous University. Mexico

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.

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

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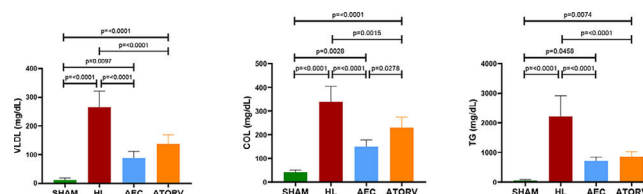
The gut microbiota and key parameters associated with MAFLD are modified by MEXMIX

R Rosas-Campos[1], A Meza-Ríos[1],
S Rodríguez-Sanabria[1], R de la Rosa-Bibiano[1],
A Santos[2], A Sandoval-Rodríguez[1],
J Armendáriz-Borunda[1,2]

[1] *Institute of Molecular Biology in Medicine and Gene Therapy. University Health Sciences Center. Guadalajara University. Mexico*
[2] *School of Medicine and Health Sciences. Tecnológico de Monterrey. Mexico*

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.