Materials and Patients: 24 Wistar rats of both sexes were used. Groups: Sham (SH), Non-Toxicity(JdTox), VPA and *J. dioica*+VPA (JdVPA) (n=6). *J. dioica* (300 mg/kg, p.o) was administered for 7 days, followed by VPA (500 mg/kg, i.p, for four days) injected concomitantly. Biochemical markers, oxidative stress, and histological analysis were determined. Ethics Committee approval under HI22-00003 registry and PAICYT 143-CS-2022 financing. The research group declares no conflict of interest.

Results: VPA group showed a significant increase in ALT and AST against Sham, JdVPA group showed a significant decrease in these parameters *vs.* VPA (Figure 1), and the remaining biochemical markers showed no statistically significant differences between the groups. The VPA group presented statistically significant alterations in the concentrations of malondialdehyde (MDA), reduced glutathione (GSH), and superoxide dismutase (SOD) *vs.* SH. The JdVPA group significantly improved the damage caused by VPA, decreasing MDA and increasing GSH and SOD (Figure 2). Histologically, VPA presented an inflammatory infiltrate, which decreased in the JdVPA group. However, this difference was not statistically significant.

Conclusions: In murine models, VPA has been able to induce alterations in transaminase levels and oxidative stress markers, both of which may indicate the presence of liver damage. Plants of the *Jatropha* genus have been shown to possess phenolic and flavonoid compounds with antioxidant capacity, which may be responsible for the hepatoprotective effect observed in this study using *J. dioica* at the evaluated dose without showing toxicity.

Ethical statement

The protocol was registered and approved by the Ethics Committee.

Declaration of interests

None

Funding

Funding for this project came from PAICYT under registration number 143-CS-2022.

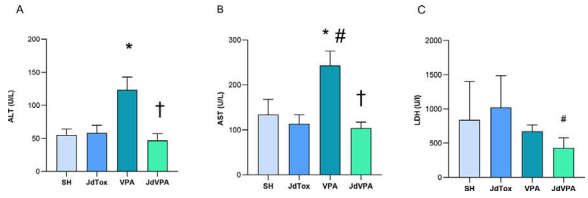

Figure 1. Serum biochemical markers. (A) Serum ALT levels, *P = 0.036 vs. SH, † P= 0.0015 vs. AVP-C. (B) Serum AST levels, *P<0.0001 vs. SH, #P<0.0001 vs. JdTox, †P<0.0001 vs. AVP-C. (C) Serum LDH levels, #P < 0.0498 vs. JdTox. Kruskal-Wallis with Dunn's post hoc (A) and One-way ANOVA with Tukey's post-hoc (B-C)

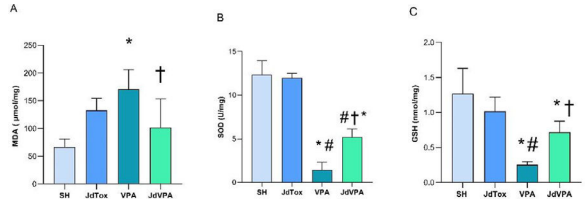

Figure 2. Liver tissue concentrations of oxidative stress biomarkers. (D) MDA, *P = 0.0012 vs. SH, † P= 0.0283 vs. AVP-C. (E) SOD, *P < 0.0001 vs. SH, #P < 0.0001 vs. JdTox, †P < 0.0003 vs. AVP-C. (F) GSH, * P < 0.007 vs. SH, # P =0.0007 vs. JdTox, † P=0.0221 vs. AVP-C. One-way ANOVA with Tukey's post-hoc (A-C)

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Evaluation of the hepatoprotective effect of *Flourensia cernua* against the damage induced ischemia-reperfusion in Wistar rats.

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Introduction and Objectives: Liver transplantation is the optimal treatment in patients with irreversible liver damage. The principal complication of a transplant is ischemia-reperfusion injury (I/R), which induces primary graft rejection. Treatment with plant extracts prior to I/R has decreased the severity of this injury due to their potential anti-inflammatory and antioxidant activity. A plant that presents potential antioxidant activity is *Flourensia cernua* (Fc). The objective was to evaluate the hepatoprotective effect of *Flourensia cernua* against the damage induced by ischemia-reperfusion in Wistar rats.

Materials an Patients: 42 mixed Wistar rats were sorted into 7 groups (n=6). Fc was administered (200 mg/kg/, p.o/5 days) followed by I/R clamping of the left portal triad producing 1hr of 70% ischemia and 2 or 24hrs of reperfusion. Biochemical and oxidative stress biomarkers, proinflammatory cytokine and gene expression were determined. Ethics Committee approval under HI17-00002 registry and PAICYT 152-CS-2022 financing. The research group declares no conflict of interest.

Results: The I/R groups with 2 (IR2hr) and 24 hour (IR24hr) reperfusion displayed significantly elevated ALT and AST concentrations vs. Sham (SH); only FcIR2hr significantly decreased these enzymes (Figure 1). The remaining biochemical parameters did not show any significant differences between the groups. IR2hr group induced a statistically significant alteration of oxidative stress biomarkers, Fc counteracted these effects, with a decrease of malondialdehyde (MDA) and an increase of reduced glutathione (GSH) and the superoxide dismutase(SOD) (Figure 2). The gene expression of NF$\kappa\beta$ was increased in IR2hr group, the treatment with *F. cernua* counteracted this increase. TNF-α was significantly increased in the IR2hr group and decreased in the treatment group.

Conclusions: I/R is a widely studied injury model, capable of inducing pathological changes in several spheres, not unlike the observed results in the present study; the hydroalcoholic extract of Fc displayed anti-inflammatory and antioxidant activity at 200mg/kg, it was not toxic and proved to be hepatoprotective against I/R.

Ethical statement

The protocol was registered and approved by the Ethics Committee.

Declaration of interests

None

Funding

Financing from PAICYT 152-CS-2022

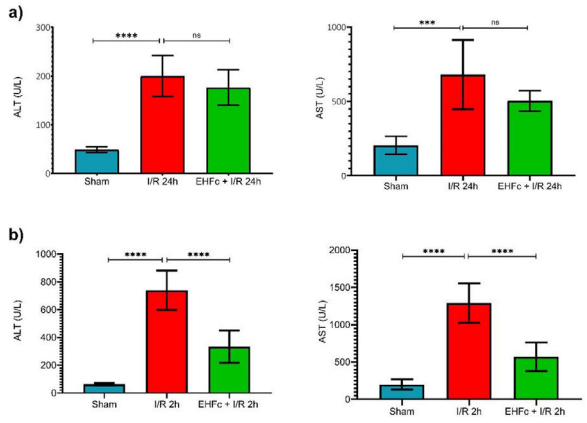

Figure 1. Evaluation of the hepatoprotective activity of the hydroalcoholic extract of *Flourensia cernua* (EHFc). Levels of serum ALT and AST in different study groups. a) I/R at 24h after reperfusion, b) I/R at 2h after reperfusion. (Mean ± SD. **** *P<0.0001*, *** *P<0.001* vs. the I/R group; n=6 for each group). Sham (healthy control group), I/R (damage control group), EHFc + I/R (treatment group).

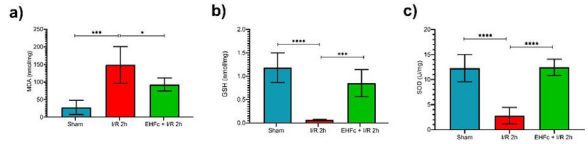

Figure 2. Evaluation of oxidative stress in hepatic tissue. a)Malonaldehyde (MDA), b)Reduced glutathione (GSH), c)Superoxide dismutase(SOD). (Mean ± SD. ****P<0.0001*, ***P<0.001*, **P<0.05* vs. the I/R at 2h after reperfusion group; n=6 for each group). Sham (healthy control group), I/R (damage control group), EHFc + I/R (treatment group).

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Overlap syndrome: Report of a case and review of the literature.

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Introduction and Objectives: Autoimmune liver disorders, like autoimmune hepatitis, primary biliary cholangitis, and primary sclerosing cholangitis, are characterized by an atypical immune response that targets bile duct damage in primary biliary cholangitis and significant portal and lobular lymphoplasmacytic inflammation in autoimmune hepatitis. Most patients have no difficulty distinguishing between the two entities. However, certain individuals exhibit symptoms of a confluence of two autoimmune liver disorders, referred to as Overlap Syndrome.

We present the case of a woman who has been diagnosed with primary biliary cholangitis with some features of autoimmune hepatitis.

Materials and Patients: A 48-year-old woman presents with a 3-year history of jaundice, night-time pruritus, fatigue, and a 10-kilogram weight loss. Her medical record includes arterial hypertension for one year of evolution and weekly consumption of 50 g of alcohol for 20 years.

Results: Blood analysis showed BT 1.4, BD 0.63, TGO 236, TGP 220, FA 2505, DHL 441, AFP 1.89, CA19-9 6.43, and a negative viral panel. Liver ultrasonography showed early-stage liver cirrhosis. Endoscopy revealed erosive gastritis. A percutaneous liver biopsy showed portal and periportal nonspecific chronic inflammation with localized necrosis. The patient was prescribed ursodeoxycholic acid TID and prednisone 50 mg QD based on the initial suspicion that he had primary biliary cholangitis. At a subsequent appointment, she presented AST 132, ALT 114, FA 583, GGT 474, positive ASMA, and ANA 1:160. The diagnosis of an overlap syndrome between primary biliary cholangitis and autoimmune hepatitis was made in accordance with the Paris criteria. The patient received prednisone 25 mg QD, azathioprine 50 mg QD, and ursodeoxycholic acid TID.

Conclusions: In the present case report, the patient's condition progressed, manifesting symptoms indicative of chronic liver injury. Immunosuppressants and ursodeoxycholic acid were administered according to guidelines, improving symptoms and biochemical indicators. Liver biopsies and noninvasive methods for liver fibrosis staging and disease progression deserve further investigation.

Autoimmune liver disorders are distinguished by an atypical immune reaction that targets the hepatocytes or bile ducts. Certain individuals exhibit symptoms of a co-occurrence of two medical conditions, referred to as Overlap Syndrome, which is associated with more severe outcomes. These outcomes include Crohn's disease, Sjögren's syndrome, cirrhosis, and hepatocellular carcinoma.

The variability of presentation and clinical characteristics in autoimmune liver disorders has made Overlap Syndrome classification, diagnosis, and treatment debated. The Paris criteria (Chazouillères 1998) are the most practical option for implementation due to their inherent simplicity and precision. Nevertheless, certain guidelines recommend against the utilization of the Paris criteria due to certain limitations. Future studies and validation of diagnostic and prognostic scores are needed for effective and timely therapy.

Ethical statement

The identity of the patients is protected. Consentment was obtained.

Declaration of interests

None

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One-year survival after liver transplantation in a group of geriatric patients

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Introduction and Objectives: Prevalence of patients with decompensated cirrhosis with requirement of liver transplantation (LT) has increased in our country. A significant percentage of patients with this condition belongs to a geriatric population, which could contraindicate LT, although trends in other countries indicate that the results of LT in geriatric patients are excellent.