

Anti-Inflammatory, Antioxidant and Hepatoprotective Potential of Milk Thistle in Albino Rats

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SUMMARY. Liver disease can occur due to diabetes and the opposite could be true. Milk thistle extract, silymarin, extracted from the seeds of milk thistle, is historically used as herbal medicine for its hepatoprotective activities. The aim of the current study is to evaluate the extent of hepatoprotective properties of an optimized dose of pharmaceutically formulated milk thistle on liver disease recovery in diabetic female albino rats and its antidiabetic activity. To investigate the effects of milk thistle, female rats were divided into four groups (n=8). Healthy control group and healthy control group receiving daily dose of milk thistle, diabetic group and diabetic group receiving daily dose of milk thistle. 200 mg/kg/day of milk thistle was orally administered to the experimental rats. Blood samples were collected from all rats at the beginning of the study and after 4 weeks of treatment. Hepatic function was evaluated by measuring hepatic related enzymes. Outcomes revealed that the ingestion of a daily dose of formulated milk thistle, can successfully achieve the therapeutic target and avoid further degradation of hepatic cells, as a result of diabetes, assessed through significantly improved level of hepatic enzymes and clear histopathological restoration revealed microscopically. Total antioxidant status and inflammatory marker also significantly increased and decreased respectively in the treated diabetic group. According to our findings, the 4-week treatment with milk thistle significantly improved the diabetic status of rats with a clear decline in the level of fasting blood glucose. In conclusion, these findings validate that milk thistle is effective in the healing of damaged hepatic cells, and acts as a prophylactic measure against the threat of diabetes and its complications.

RESUMEN. La enfermedad hepática puede ocurrir debido a la diabetes y lo contrario podría ser cierto. El extracto de cardo mariano, silimarina, extraído de las semillas del cardo mariano, se ha utilizado históricamente como medicina herbal por sus actividades hepatoprotectoras. El objetivo del presente estudio es evaluar el alcance de las propiedades hepatoprotectoras de una dosis optimizada de cardo mariano formulado farmacéuticamente sobre la recuperación de la enfermedad hepática en ratas albinas hembras diabéticas y su actividad antidiabética. Para investigar los efectos del cardo mariano, las ratas hembra se dividieron en cuatro grupos (n = 8). Grupo control sano y grupo control sano recibiendo dosis diaria de cardo mariano, grupo diabético y grupo diabético recibiendo dosis diaria de cardo mariano. Se administraron por vía oral 200 mg/kg/día de cardo mariano a las ratas experimentales. Se recogieron muestras de sangre de todas las ratas al comienzo del estudio y después de 4 semanas de tratamiento. La función hepática se evaluó midiendo las enzimas relacionadas con el hígado. Los resultados revelaron que la ingestión de una dosis diaria de cardo mariano formulado puede lograr con éxito el objetivo terapéutico y evitar una mayor degradación de las células hepáticas, como resultado de la diabetes, evaluada a través de un nivel significativamente mejorado de enzimas hepáticas y una clara restauración histopatológica revelada microscópicamente. El estado antioxidante total y el marcador inflamatorio también aumentaron y disminuyeron significativamente, respectivamente, en el grupo diabético tratado. Según nuestros hallazgos, el tratamiento de 4 semanas con cardo mariano mejoró significativamente el estado diabético de las ratas con una clara disminución en el nivel de glucosa en sangre en ayunas. En conclusión, estos hallazgos validan que el cardo mariano es eficaz en la curación de las células hepáticas dañadas y actúa como medida profiláctica contra la amenaza de la diabetes y sus complicaciones.

KEY WORDS: antioxidant, diabetes mellitus, hepatic disease, inflammation, milk thistle.

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