III SIMPÓSIO INTERNACIONAL EM INVESTIGAÇÕES QUÍMICO-FARMACÊUTICAS
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**Área: FAR 19**

# EFFECT OF N-ACETYLCYSTEINE AND SILYMARIA IN THE ETHANOL AND LIPOPOLYSACCHARIDE-INDUCED LIVER INJURY IN MICE

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## *INTRODUCTION*

Ethanol-induced steatosis has been considered a frequent condition of liver damage, which can progress to alcoholic hepatitis and cirrhosis. Such a condition develops after ingestion of high doses of alcohol, especially after three to seven days of excessive alcohol consumption. Another etiologic agent of liver damage are bacterial products arising from bacterial translocation resulting from dysbiosis associated with inflammation and/or intestinal infection. Thus, the aim of the present study was to evaluate the effect of N-acetylcysteine and silymarin on the maintenance of liver integrity exposed to ethanol and LPS.

## *MATERIAL AND METHODS*

For this, Swiss mice (2-3 months) were divided into 4 groups (n=6), namely: naive, vehicle, non-acetylcysteine (20 mg/kg) and silymarin (200 mg/kg). Treatments occurred orally (p.o) once a day for 10 days. Concomitantly, liver damage was induced by the administration of ethanol (30% p.o) for ten days, once a day, by gavage followed by a single administration of LPS (2mg/kg, intraperitoneal) 24h before euthanasia. After the end of the treatment period, that is, on the 11th day, the animals were euthanized, and samples of liver and blood tissue were taken for histological and biochemical measurements.

## *RESULTS*

The results found in relation to liver enzymes, glutamic pyruvic transaminase (TGP), glutamic oxalacetic transaminase (TGO), only the administration of n-acetylcysteine had a positive influence on these parameters. While silymarin was able to restore reduced glutathione levels and both treatments did not reduce the levels of the malonaldehyde. In relation to the enzymatic antioxidant defense glutathione *S*-transferase, superoxide dismutase and catalase, the treatments did not show any difference in relation to vehicle group, without beneficial effect against oxidative stress. Further, the inflammatory parameters myeloperoxidase and n-acetylglucosamidase are increased in this model of liver injury, but N-acetylcysteine and silymarin did not avoid it.

## *CONCLUSIONS*

Differently from what was found in other liver injury models, the administration of n-acetylcysteine and silymarin do not positively influence antioxidant and anti-inflammatory patterns in liver tissue from animals exposed to ethanol and LPS.

## *ACKNOWLEDGMENTS*

Universidade do Vale do Itajaí (UNIVALI) and Fundação de Amparo a Pesquisa and Inovação de Santa Catarina (FAPESC).