

Abstract

Introduction: Various chemical and physical compounds can play a role in the development of blood cancer. One of these compounds is n-Ethyl-n-Nitrosurea (ENU), which is a very strong alkylating agent. Exposure to N-nitroso compounds (NOCs) in our environment through pesticides, tobacco and smoked meat can be potentially carcinogenic. In this study, we decided to investigate the chemopreventive effects of Sinapic acid on leukemia caused by the ENU in a mouse.

Materials and methods: 21 Female Syrian mice were divided into three groups: control, sinapic acid +n-Ethyl-N-Nitrosurea group and N-Ethyl-N-Nitrosurea group. Sinapic acid (30 mg/kg, intraperitoneal) was injected into mice for 30 days. On the 31st day, N-Ethyl-N-Nitrosurea was injected intraperitoneally to the mice at a dose of 80 mg/kg, and then the mice were monitored for five months.

Results: Our results showed that sinapic acid significantly had a positive effect on the survival of the studied mice up to 71%, and on the other hand, it prevented the weight change caused by exposure to N-Ethyl-N-Nitrosurea. Also, sinapic acid improved lipid peroxidation caused by N-Ethyl-N-Nitrosurea and also prevented ROS formation and damage to lysosome membrane and mitochondrial membrane potential.

Conclusion: Finally, our results showed that sinapic acid has a preventive effect on the toxicity caused by ENU.

Keywords: Leukemia, Mutation, n-Ethyl- n-Nitrosurea (ENU), Sinapic Acid (SA)