

Hepatoprotective Effect of Pioglitazone in Cases of Chemotherapy Induced Steatohepatitis

S. Celik¹, K. Kartal², H. Ozseker³, M. Hayran⁴, E. Hamaloglu⁵

¹Department of General Surgery, Van Training and Research Hospital, Van, Turkey

²Department of General Surgery Sisli Etfal Training and Research Hospital, Istanbul, Turkey

³Department of Pathology, Hacettepe University, Faculty of Medicine, Ankara, Turkey

⁴Department of Preventive Oncology, Hacettepe University, Faculty of Medicine, Ankara, Turkey

⁵Department of General Surgery, Hacettepe University, Faculty of Medicine, Ankara, Turkey

Abstract

Background/Objectives: To evaluate the harmful effects of 5-floururacil (5-FU) and Irinotecan on the liver and to determine the role of Pioglitazone in averting liver damage.

Methods: Sixty Sprague-Dawley female rats were divided into 4 groups. The first group (n=20) was administered 40 mg of 5-FU and 40 mg/kg of Irinotecan intraperitoneally for 4 cycles, while the second group (n=20) received 4 mg/kg of Pioglitazone by gastric gavage at 5 days a week for 20 days in addition to chemotherapy. The third group (n=10) was the sham group; chemotherapy regimen was given as in the first group. In addition, normal saline was given daily for 20 days by gastric gavage. The fourth group (n=10) was only given a standard diet as a control group. Then, blood samples were studied for the evaluation of alanine aminotransferase (AST) and alanine aminotransferase (ALT) levels. And left liver lobes of rats were taken for pathological analysis.

Results: Although short-term chemotherapy was administered, aminotransferase (AST) and alanine aminotransferase (ALT) levels were found to be significantly higher in the first and third groups compared to the others ($p<0.0001$). No significant difference was determined between the second and the control group. Pioglitazone reduced the adverse metabolic effects of chemotherapy on the liver, but had no effect on the histopathological changes.

Conclusion: short-term CT causes metabolic disruption in hepatocytes, but not relevant with CASH. Preventive treatments like Pioglitazone should be used more carefully

Key words: Pioglitazone, chemotherapy, steatohepatitis

Corresponding author: Kinyas Kartal, MD

Sisli Etfal Training and Research Hospital

Sisli Istanbul 34371 Turkey

E-mail: drkinyaskartal@gmail.com