



Selenium can reduce the side effects of cisplatin as a chemotherapy drug

N. Ataei*

Ph.D. student of Biochemistry, Department of Clinical Biochemistry, School of Pharmacy and Pharmaceutical Sciences, Isfahan University of Medical Sciences, Isfahan, Iran.

Background and Aims: Selenium is an essential mineral for human body, it is a part of glutathione peroxidases that are antioxidant enzymes and the most important role of selenium is as a natural antioxidant, in addition to, it can bind to certain heavy metal like mercury, cadmium and platinum. Cisplatin is a chemotherapy drug contains platinum. Its side effects generally are hair loss, diarrhea, anemia, abdominal pain and kidney problems. This study experimented the effect of selenium as an antioxidant on the side effects of cisplatin.

Methods: there were two groups included 30 breast cancer women that received cisplatin as a chemotherapy drug. One group received 200 µg selenium as a tablet once a day for 4 months with cisplatin and the other group did not receive selenium. Type and severity of side effects from chemotherapy, blood glutathione peroxidase and red and white blood cell numbers were measured in all of the participants.

Results: women with selenium therapy had significantly higher amount of blood glutathione peroxidase than the other group. This group also showed significantly less nausea, vomiting, hair loss, abdominal pain and loss of appetite as a side effect of cisplatin than the other group.

Conclusions: selenium as an antioxidant can reduce the side effects of cisplatin as a chemotherapy drug. Because chemotherapy drugs generate free radicals in body that can damage to normal cells as well as tumor cells. In addition to selenium can bind to platinum and prevent its toxic effects and also it increase immune system and help to treatment. But its using dosage for having a good effect is very important and should be controlled.

Keywords: Selenium; Cisplatin; Chemotherapy drug; Breast cancer