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# Lycopene and chemotherapy toxicity.

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## Abstract

Antineoplastic agents induce the production of free radicals and other reactive oxygen species (ROS) in biological systems. Cytotoxic effects of antineoplastic drugs depend on rapid proliferation of cancer cells. Oxidative stress occurring during chemotherapy may potentially interfere with these effects through reducing the rate of cell proliferation. ROS may also contribute to side effects that occur with chemotherapeutic agents such as doxorubicin-induced cardiotoxicity, cisplatin-induced nephrotoxicity, and bleomycin-induced pulmonary fibrosis. Lycopene is a major carotenoid present in tomatoes, and it is a potent antioxidant that may provide protection against cellular damage caused by ROS. Lycopene may reduce or prevent the side effects of chemotherapy due to its antioxidant and anti-inflammatory properties. This review focuses on the protective effects of lycopene against antineoplastic agent induced toxicity.

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