Walnut consumption protects rats against cisplatin-induced neurotoxicity.

Shabani M, Nazeri M, Parsania S, Razavinasab M, Zangiabadi N, Esmaeilpour K, Abareghi F.

Source

Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran.

Abstract

Walnut is extensively used in traditional medicine for treatment of various ailments. It is described as an anticancer, anti-inflammatory, blood purifier and antioxidant agent. In this study, we investigated whether or not Walnut could protect neurons against cisplatin-induced neurotoxicity in rats. Dietary walnut (6%) was assessed for its neuroprotective effects through the alteration in performance of hippocampus- and cerebellum-related behaviors following chronic cisplatin treatment (5 mg/kg/week for 5 consecutive weeks) in male rats. We also evaluated the effect of cisplatin and walnut administration on nociception. We showed that exposure of adolescent rats to cisplatin resulted in significant decrease in explorative behaviors and memory retention. Walnut consumption improved memory and motor abilities in cisplatin treated rats, while walnut alone did not show any significant changes in these abilities compared to saline. Cisplatin increased latency of response to nociception, and walnut reversed this effect of cisplatin. We conclude that walnuts in the diet following anticancer drugs such as cisplatin might have a protective effect against cisplatin-induced disruptions in motor and cognitive function. However, further studies are needed to elucidate the exact mechanisms of this protective effect of walnut and to explore underlying mechanisms.

Copyright © 2012 Elsevier Inc. All rights reserved.