Comment on: The effects of Vitamin E and Selenium on cisplatin-induced nephrotoxicity in cancer patients treated with cisplatin-based chemotherapy: A randomized, placebo-controlled study

Sir,

We read with great interest the published article in the esteemed 'Journal of Research in Medical Sciences', by Hemati *et al*., entitled, "The effects of vitamin E and selenium on cisplatin-induced nephrotoxicity in cancer patients treated with cisplatin-based chemotherapy: A randomized, placebo-controlled study". In 22 cancerous patients, who received 400 IU vitamin E and 200 μg selenium daily and 24 patients, who received placebo, they found that vitamin E and selenium can be used to reduce cisplatin-induced nephrotoxicity and bone marrow suppression.[1] In this paper, we would like to mention a few points about kidney protective efficacy of selenium. Renal injury is common following cisplatin infusion.[2] Recently, in a double-blind controlled randomized clinical trial, we studied 122 cancerous patients (85 male and 37 female; age range of 14-82 years old) who were candidate to receive chemotherapy regimens consisting cisplatin. They were allocated into two groups using a randomized numbered list. Intervention group received a 400 mcg selenium tablet/day and patients in control group took a placebo tablet/day. Primary end points were an increase in plasma creatinine above 1.5 mg/dl in men and 1.4 mg/dl in women, or increase of plasma creatinine more than 50% from baseline or urine flow rate less than 0.5 ml/kg/h. Serum creatinine level was measured initially and on the 5th day after cisplatin therapy. In our study, in case group no laboratory signs of kidney injury were observed, while among placebo group, seven patients had criteria of acute kidney injury. We concluded that selenium could probably prevent cisplatin-induced acute kidney injury, when it is added to hydration therapy in cancerous patients.[3] Recently, much attention has been made toward kidney protective efficiency of selenium. The results of the study conducted by Randjelovic *et al*., showed selenium supplementation attenuates oxidative-stress-associated renal injury by reducing oxygen free radicals and lipid peroxidation in gentamicin-treated rats,[4] while gentamicin-renal damage in Wistar rats is a model of acute kidney injury indicated that gentamicin-induced tissue injury was mediated through oxidative reactions.[5-11] Selenium is a trace element that participates as a cofactor in several enzymes, one of them is participant in the regulation of enzymatic antioxidant defenses.[12] It was found that selenium supplementation in renal patients reduce the products of oxidative stress.[12-14] In a study by Taskin *et al*., on adriamycin-induced renal damage in rats showed selenium is effective *in vivo* against adriamycin-induced kidney injury via the restoration of total antioxidant and oxidant status, which prevented mitochondrial damage.[15] Recent findings have shown that plasma selenium level have been found to be reduced in patients with acute kidney injury.[16-18] indeed, low serum selenium levels are a frequent finding in patients with chronic renal failure too.[19-21] However, to date, few investigations have studied the association of hyposelenemia and morbidity and mortality in renal failure patients. Thus, these available data lend further evidence for the attribution of selenium in its kidney protective property. In this regard, to understand the selenium kidney protective properties better, more experimental rat models or clinical studies are suggested.

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