

Response to "Nephrotoxicity: Evidence in Patients Receiving Cisplatin Therapy"

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An article by Duffy, Fitzgerald, Boyle, and Rohatgi (2018) was published in the April issue of the *Clinical Journal of Oncology Nursing*. Based on review, the authors suggested some clinical recommendations to protect the kidneys against cisplatin-induced nephrotoxicity, including hydration or supplementation of magnesium or mannitol during cisplatin administration. In addition to clinical findings, the related basic sciences data may be helpful in formulating treatment guidelines in cisplatin therapy. This letter will present several suggestions for future clinical studies based on laboratory findings.

Cisplatin-induced nephrotoxicity has been reported to be gender related (Aydin, Agilli, & Aydin, 2014; Nematbakhsh et al., 2013, 2017; Pezeshki, Maleki, Talebi, & Nematbakhsh, 2017; Pinches et al., 2012), and risk for nephrotoxicity is higher in men than in women. The kidney function marker is also altered by cisplatin (Stakisaitis et al., 2010). The ability of supplementations to attenuate cisplatin-induced nephrotoxicity was also gender related (Eshraghi-Jazi et al., 2011; Haghghi et al., 2012; Naseem, Hassan, Alhazza, & Chibber, 2015; Zamani et al., 2016). The female sex hormone estrogen was found to aggravate cisplatin-induced nephrotoxicity (Ghasemi et al., 2016; Nematbakhsh et al., 2012, 2013). Hypomagnesemia is a well-known side effect of cisplatin, and magnesium supplementation was suggested by Duffy et al. (2018); however, the protective role of magnesium against cisplatin-induced

nephrotoxicity has failed in the laboratory (Ashrafi et al., 2012; Soltani, Nematbakhsh, Eshraghi-Jazi, Talebi, & Ashrafi, 2013). Beta cell dysfunction is a metabolic disorder that may also alter the effect of cisplatin-induced nephrotoxicity. In another study, streptozotocin-induced diabetic rats were protected against cisplatin-induced nephrotoxicity (Soltani et al., 2013).

These laboratory findings should not be minimized. Clinical trials are needed to find the role of gender, sex hormones, and accompanying disease in cisplatin-induced nephrotoxicity. Looking at more factors will certainly help reduce the side effects of the drug and will be beneficial to patients whose only hope of life may be the beneficial effects of the drug in their cancer treatment.

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