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Correspondence

Platinum type is key in determining degree of neuropathy

Letter to gynecologic oncology editor:

Your recent article on chemotherapy-induced peripheral neuropathy (CIPN) and its impact on health-related quality of life among ovarian cancer patients (149:455–63) together with the accompanying editorial (149:433–4) emphasize its lasting impact. However, neither addresses contributions from each of the doublet drugs to CIPN. Specifically, cisplatin neurotoxicity is minimally reversible, whereas taxane sensory neuropathy often improves after discontinuation of the agent. So where does carboplatin fit in? Patient reported outcomes from randomized studies add reliability in assessing neuropathy given assessment imprecision. Carboplatin by itself has significantly less neurotoxic potential than cisplatin: when combined with paclitaxel the seminal study best shown in its fig. 3 that carboplatin significantly allows greater delivery of cycles without neuropathy than the then standard cisplatin doublet. (Neijt et al., 2000) In fact, common use of carboplatin for recurrent ovarian cancer seldom aggravates residual grade 1 paresthesias. In 2013, comparing taxane neuropathy across randomized trials (Kudlowitz and Muggia, 2013) cisplatin pharmacology in GOG 104 plays a role and a 96-hourinfusion diminished some of the neuropathy from the then conventional 24-hour when either were combined with paclitaxel –that presumably should be less neuropathic than the shorter infusions currently used. (Spriggs et al., 2007) In GOG158, the carboplatin containing doublet becoming the first-line standard also confirmed the lower rates of neuropathy relative to the cisplatin doublet. (Ozols et al., 2007) When paclitaxel is combined with carboplatin the rates of neuropathy are mostly driven by paclitaxel dose and schedule: weekly schedules of paclitaxel have shown that neuropathy rates parallel paclitaxel dosing with 80 mg/m^2 yield similar rates of neurotoxicity grades 3 and 4 to the intermittent paclitaxel 175 mg/m2 containing regimen (Katsumata et al., 2009), whereas in a subsequent similar comparative study of weekly versus intermittent every 3 weeks paclitaxel 60 mg/m^2 weekly yielded less neuropathy than the intermittent schedule. (Pignata et al., 2014)

Awareness of the relative contributions of cisplatin vis-à-vis carboplatin is key in minimizing the often devastating effects of CIPN: when platinums are combined with taxanes in women with ovarian cancer, the interaction between cisplatin and paclitaxel is likely to have a more significant impact on quality of life.

Author contribution

Dr. Franco Muggia is the primary contributor for this correspondence, Dr. David Kudlowitz assisted.

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