Intermittent Intraperitoneal Dose of Teicoplanin in Peritoneal Dialysis-Related Peritonitis

KEY WORDS: Peritonitis; teicoplanin.

Editor:

In an attempt to treat one of our patients for peritoneal dialysis (PD)-related peritonitis caused by *Staphylococcus haemolyticus* resistant to vancomycin,

we chose to administer teicoplanin in our glycopeptide-based antibiotic regimen. To determine the exact dosing, we referred to Table 4 ("Intraperitoneal antibiotic dosing recommendations for CAPD patients") on page 402 of the International Society for Peritoneal Dialysis (ISPD) recommendations concerning PD-related infections published in your journal in July 2010 (1). According to the table, the recommended intermittent intraperitoneal (IP) dose of teicoplanin is 15 mg/kg once daily, equivalent to about 1000 mg teicoplanin administered daily in our 69-kg patient. In the same table, the continuous maintenance dose of teicoplanin is 160 mg for four 2-L bag exchanges daily. To understand this discrepancy, we went through the entire paper. A more careful reading of the text, and especially the legend to Figure 4, revealed that the intermittent IP teicoplanin administration frequency is not daily but every 5–7 days.

It is true that very few data are available regarding the teicoplanin dose in PD peritonitis. In a pharmacokinetic study, Stamatiadis *et al.* recommended a daily teicoplanin regimen in PD patients, but for intravenous and not IP administration (2). In two other studies in which teicoplanin was administered continuously IP (3,4), the maintenance dose was 20 mg per liter of dialysate, which is consistent with the recommended continuous IP maintenance dose in Table 4 of the 2010 update to the ISPD guidelines. Intermittent and continuous IP administration of teicoplanin were compared in a German study for the treatment of PD-related peritonitis in children, in which the intermittently treated patients received 2 doses of teicoplanin 15 mg/kg 7 days apart (5). That regimen is consistent with the legend to Figure 4 and the text on the same page of the guidelines, but not, of course, with the recommended intermittent dose of teicoplanin in Table 4, which is extremely high.

Given the worldwide impact of the ISPD recommendations, it is reasonable to suggest that Table 4 from the guidelines be modified as far as the intermittent IP teicoplanin dose is concerned, because the current dose recommendation could lead to very high teicoplanin exposure and potential toxicity should someone read only that table and not read the full guideline thoroughly.

DISCLOSURES

The authors have no relevant financial relationships or conflicts of interest to declare.

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REFERENCES

1. Li PK, Szeto CC, Piraino B, Bernardini J, Figueiredo AE, Gupta A, *et al.* Peritoneal dialysis-related infections recommendations: 2010 update. *Perit Dial Int* 2010; 30:393–423.
2. Stamatiadis D, Papaioannou MG, Giamarellos-Bourboulis EJ, Marinaki S, Giamarellou H, Stathakis CP. Pharmacokinetics of teicoplanin in patients undergoing continuous ambulatory peritoneal dialysis. *Perit Dial Int* 2003; 23:127–31.
3. Finch RC, Holliday AP, Innes A, Burden RP, Morgan AG, Shaw PN, *et al.* Pharmacokinetic behavior of intraperitoneal teicoplanin during treatment of peritonitis complicating continuous ambulatory peritoneal dialysis. *Antimicrob Agents Chemother* 1996; 40:1971–2.
4. Lupo A, Rugiu C, Bernich P, Laudon A, Marcantoni C, Mosconi G, *et al.* A prospective, randomized trial of two antibiotic regimens in the treatment of peritonitis in CAPD patients: teicoplanin plus tobramycin versus cephalothin plus tobramycin. *J Antimicrob Chemother* 1997; 40:729–32.
5. Schaefer F, Klaus G, Müller-Wiefel DE, Mehls O. Intermittent versus continuous intraperitoneal glycopeptide/ceftazidime treatment in children with peritoneal dialysis-associated peritonitis. *J Am Soc Nephrol* 1999; 10:136–45.

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