Intraperitoneal Route for Vancomycin in CAPD Patients

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Dear Sir,

We read with interest the article of Bastani et al. [1]. We do not agree with their conclusion on toxicity of the treatment. We studied the pharmacokinetics of intraperitoneal vancomycin during peritonitis [2]. Our schedule is a single dose (mean 15 mg/kg body weight) in a 2-liter bag. A second dose is administered on the 7th day. During such treatments, high serum peaks of vancomycin (99 and 122 µg/ml) were observed in 2 out of 13 cases. These peaks occurred rapidly, i.e., 6–12 h after intraperitoneal infusion. In our series, the only clinical consequence was temporary dizziness. These peaks may pass unobserved in cases where no early sampling was made. The results led us to advocate the use of intraperitoneal vancomycin with a lower dosage (10 mg/kg body weight) and with more frequent injections (every 3 or 4 days, depending on residual kidney function). As the authors pointed out, the inflammatory state of the peritoneum influences the absorption capacity of vancomycin and probably plays a part in the unforeseeable appearances of such serum peaks.

Moreover, the tobramycin dosages advocated seem too high. In case of sterile or gram-negative peritonitis, the indicated protocol implies (1) appearance of a serum peak during the loading dose and (2) infusion of a 950-mg tobramycin total dosage for a 70-kg adult using four 2-liter bags a day.

Our first way of treating peritonitis was intraperitoneal cephalothin and tobramycin (without loading dose for tobramycin and with 6.25 mg/l dialysate during 10 days). With such a protocol, we avoid the serum peak

stemming from the loading dose and use 500 mg of tobramycin to treat an episode of peritonitis. Nevertheless, all 6 patients who within 2 years suffered from 6 peritonitis episodes treated in this way show clear impairment of the audiogram test. Two of these patients had dizziness or a decrease in auditive acuteness, slowly reversible. It has to be pointed out that these incidents occurred in frequently infected patients. But this situation may occur in patients who cannot be treated by hemodialysis.

In short, we think that the tobramycin and vancomycin dosages recommended by Bastani et al. [1] may be toxic, all the more when both drugs are associated and frequently used. On the other hand, we agree upon the necessity of using two antibiotics right from the start of the treatment in order to rapidly control infection before knowing the responsible germ. The ideal association (large spectrum, nontoxicity) is still to be found.

References

Bastani, B.; Freer, K.; Read, D.; Bailey, S.; Sherman, R.A.; Davis, M.; Engels, D.: Treatment of gram-positive peritonitis with two intraperitoneal doses of vancomycin in CAPD patients. *Nephron* 45:283–285 (1987).

Mounier, M.; Benevent, D.; Denis, F.: Pharmacocinétique de la vancomycine chez les patients insuffisants rénaux chroniques en DPCA après administration intrapéritonéale. *Pathol. Biol.* 33: 542–544 (1985).