4. Vincent HH, Boer WH, Wenting GJ, Schalekamp MADH, Weimar W (1987) Simplified method for evaluating proximal tubular fluid reabsorption. Lancet II: 1406–1407
5. Bichet DG, Anderson RJ, Schrier RW (1993) Renal sodium excretion, edematous disorders, and diuretic use. In: Schrier RW (ed) Renal and electrolyte disorders, 4th edn. Little, Brown and Company, Boston, pp 89–161
6. Heyman SN, Spokes K, Egorin MJ, Epstein FH (1993) Glycine reduces early parenchymal uptake of cisplatin. Kidney Int 43: 1226–1228
7. Swan SK, Bennet WM (1993) Nephrotoxic acute renal failure. In: Lazarus JM, Brenner BM (eds) Acute renal failure, 3rd edn. Churchill Livingstone, Edinburgh New York, pp 357–392
8. Wong NLM, Walker VR, Wong EFC, Sutton RAL (1993) Mechanism of polyuria after cisplatin therapy. Nephron 65: 623–627

Reply

J. H. Beijnen

Lithium pharmacokinetics and cisplatin-based chemotherapy

Department of Pharmacy, Slotervaart Hospital/Netherlands Cancer Institute, Louwesweg 6, NL-1066 EC Amsterdam, The Netherlands

I appreciate highly the interest that Dr. F. Vincent and colleagues took in our case report describing lithium pharmacokinetics in a patient treated with four courses of cisplatin-based chemotherapy and a vigorous hydration regimen [1]. One of our interesting observations was that within 24 h of the start of the first chemotherapy course the serum lithium level dropped from 0.61 to 0.22 mmol/l (64% decrease). During the three subsequent courses this initial decrease was observed again, but its depth seemed to diminish. The decrease in lithium serum concentrations was transient and the nadir was reached in the morning of the 2nd day of each course, after which the lithium concentration increased to reach starting levels. Theoretically, there are several factors that could have influenced the lithium pharmacokinetics as outlined in our communication [1] and indicated by Vincent et al. The clinical chémistry parameters (serum creatinine, electrolytes, blood urea nitrogen levels) showed no significant change. Early proximal tubular damage such as that mentioned by Vincent et al. may have occurred, although it is difficult to associate with the transient nature of the effects observed during each course, which even tend to diminish during consecutive courses. An initial dilution effect may, indeed, be too simple a representation for the observed phenomena, which are probably more complex; however, in our setting we did not find proof of this. Future research in similar cases incorporating the measurement of parameters as indicated by Vincent et al. may cast more light on this matter. The message remains and is very clear: cisplatin-based chemotherapy can have a distinct influence on lithium pharmacokinetics that can even lead to subtherapeutic levels; careful monitoring of serum lithium levels is thus very much warranted in these cases!

References

1. Beijnen JH, Bais EM, Bokkel Huinink WW ten (1994) Lithium pharmacokinetics during cisplatin-based chemotherapy: a case report. Cancer Chemother Pharmacol 33: 523–526