Letter to the Editors

On the importance of blood sampling for ciclosporin pharmacokinetic studies

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We read the interesting paper recently published by Wilhelm *et al* [1]. Measured blood concentrations of ciclosporin (CsA) reported in Figure 2 seem very high with regards to the daily dose administered. This could be due to the method of blood sampling in some patients. Indeed, the authors mentioned that blood was collected from a peripheral venous cannula or a central venous line. Discarding the first 5 ml seems not to be sufficient to obtain non-biased CsA measurements from a central venous catheter. Hence, there have been several reports of falsely high CsA concentrations due to the absorption of CsA in the material (PVC, polyurethane or other) of the central venous catheter wall, after the catheter was used for CsA administration [2–4]. Desorption of CsA from catheters and lines may last a long time and CsA can be released several weeks after intravenous administration is stopped [5]. In our experience, patients receiving oral CsA can present with spoiled CsA concentrations even if the catheter receives a lot of others infusions after CsA. In these conditions, blood concentrations used in the study of Wilhelm *et al*. would not allow the accurate determination of pharmacokinetic parameters values. The authors justify the high AUC values obtained in their study compared with previous published data with the inhibition of the CsA metabolism by fluconazole, used for prophylaxis of fungal infections. Fluconazole was given at 50 mg day⁻¹. As fluconazole is not the most potent inhibitor among azole antifungals and furthermore, because CYP3A4 inhibition by azole antifungals is concentration-dependent [6, 7], this dosage regimen may not lead to a significant increase in CsA blood concentrations.

The site of blood sampling for CsA measurement in haematopoietic stem cell patients should be carefully selected to avoid false results. This is valuable for studies on CsA administered intravenously, and also orally, as these patients often receive intravenous CsA before being able to swallow capsules.

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declare no support from any organization for the submitted work, no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years and no other relationships or activities that could appear to have influenced the submitted work.

Competing Interests

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