Letter to the Editors

On the importance of blood sampling for ciclosporin pharmacokinetic studies

Nathalie Bleyzac

Institute of Pediatric Onco-Hematology, Lyon, France

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 theses conditions, blood concentrations used in the study of Wilheim *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 to 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.

All authors have completed the Unified Competing Interest form at http://www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and 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

There are no competing interests to declare.

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CORRESPONDENCE

Dr Nathalie Bleyzac, PharmD, PhD, Institute of Pediatric Onco-Hematology, 1 place Joseph Renaut, 69008 Lyon, France.
Tel.: +334 6916 6596
Fax: +334 6916 6692
E-mail: nathalie.bleyzac@chu-lyon.fr

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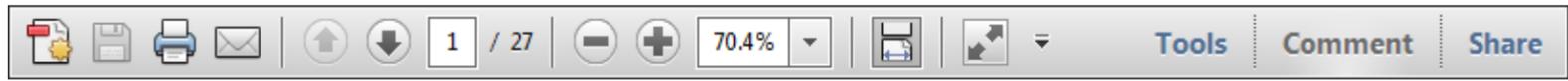
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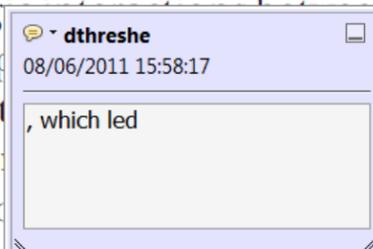
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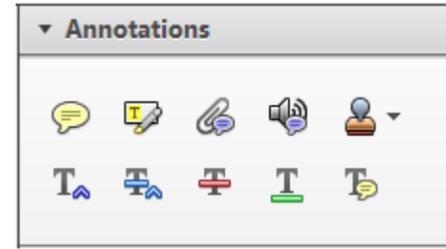
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Strikes a line through text and opens up a text box where replacement text can be entered.

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- Highlight a word or sentence.
- Click on the Replace (Ins) icon in the Annotations section.
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2. Strikethrough (Del) Tool – for deleting text.

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How to use it

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3. Add note to text Tool – for highlighting a section to be changed to bold or italic.

Highlights text in yellow and opens up a text box where comments can be entered.

How to use it

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- Type instruction on what should be changed regarding the text into the yellow box that appears.

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4. Add sticky note Tool – for making notes at specific points in the text.

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- Type the comment into the yellow box that appears.

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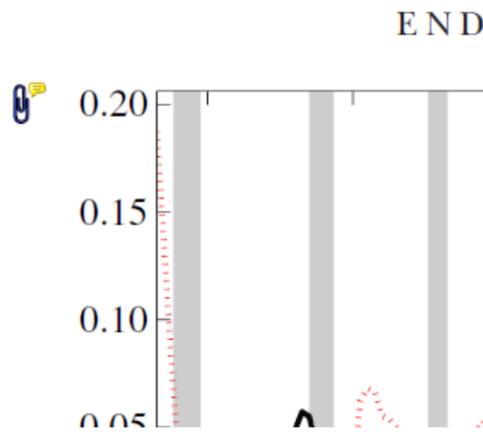
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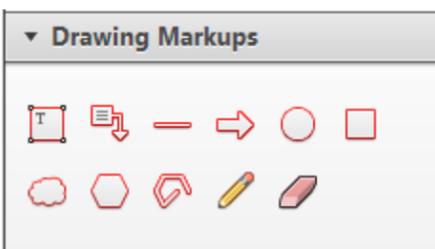
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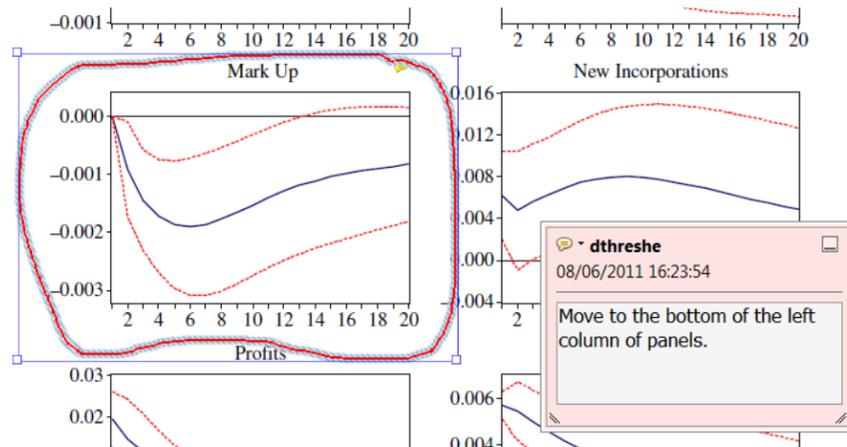
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