Reviewer's report

Title: Clinical Decision Support of Therapeutic Drug Monitoring of Phenytoin: Measured Versus Adjusted Phenytoin Plasma Concentrations

Version: 2 Date: 14 January 2012

Reviewer: Blanka Koristkova

Reviewer's report:

Major compulsory revision
This statement remains wrong: "... PTHtotal frequently is in a lower category than PHTfree (e.g. PHTtotal below its therapeutic range but PHTfree within or above its reference range), which could lead to clinical underdosing of the patient if PHTtotal and not PHTfree were used as the basis to guide dosing."

When PHTtotal is used for guiding of the treatment, these patients will be mistakenly supposed to be undertreated despite PHTfree within or above its reference range and are in fact in a danger of toxicity when the dosage will be increased with the aim to reach PHTtotal reference range. The sentence should be rewritten or at least an adjective as "specious clinical underdosing ..." should be added.

Discretionary revision
#1 As figure legend should be self-explanatory, it should be better to add the P value of statistical significance there.

#2 Additional figure 1 is superfluous as it contains the same data as Fig 1 but on logarithmic axes. Please use only one expression of data – preferably logarithmic axes. Consequently the logarithmic axes are recommended for the Additional fig 2.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.