International Journal of Applied Pharmaceutics

ISSN- 0975-7058 Vol 15, Issue 5, 2023

Erratum

IMPORTANCE OF SUFFICIENT TIME-POINTS FOR EFFICIENT PHARMACOKINETIC (PK) COMPARTMENTAL MODELING

TIRTHA NANDI*

Scientist, Clinical Pharmacology and Pharmacometrics, Alnylam Pharmaceuticals. 101 Main Street, 10th floor, Cambridge, MA 02142
Email: tirthanandi1989@gmail.com

https://innovareacademics.in/journals/index.php/ijap/article/view/46553

ABSTRACT

Objective: Modeling and simulation are the two widely used terms, usually simultaneously mentioned in most PK discussions. There are several modeling strategies to model pharmacokinetic (PK) profiles. Compartmental modeling divides the body into different compartments based on the observed C-t profile and model comparison functions. Most C-t profiles are efficiently modeled using at max three compartments model (one, two, or three compartments). While there are many important applications of classical compartmental models, it emphasizes the importance of selecting the best model to explain the observed data. Therefore, initial data generation is very important. In many instances, insufficient data collection might not lead to the best model, which can be proved later costly by underpredicting or overpredicting PK parameters. This paper illustrates that adequate data collection can lead to correct model selection.

Methods: Data was generated using the three-compartmental model's explicit equation for twenty-five simulated patients with 15% random variability. Generated data were fitted to different compartmental models using sufficient time points (case a) and without enough time points (case b).

Results: In the case of a, generated data from three compartmental models was explained best by three compartmental models. In the case of b, the same data was presented better by two compartmental models. Finally, in the case of b, with sufficient time points, data generated from three compartmental models could be explained better by three compartmental models.

Conclusion: With sufficient time points, the compartmental PK model can converge to an accurate one. Although almost all pharmacometricians know the importance of time points, there is no paper with a mathematical explanation of this incident. This paper will help the current and future pharmacometricians to help design efficient *in vivo* works.

Keywords: Compartmental modeling, Pharmacokinetics (PK), Classical PK models, IV bolus, Clearance, Volume of distribution, Bioavailability

International Journal of Applied Pharmaceutics

DOI: 10.22159/ijap.2023v15i1.46553

CORRECTION:

Correction to: Importance of sufficient time-points for efficient pharmacokinetic (PK) compartmental modeling

Tirtha Nandi*

Received: 10 Oct 2022, Revised and Accepted: 21 Nov 2022

The affiliation of the author Tirtha Nandi is incorrect. The correct affiliation for Tirtha Nandi is PhD Fellow, Temple University, Philadelphia, PA 19140. The error occurred due to an oversight from author's side during the submission process, and the author sincerely apologizes for any inconvenience caused by this mistake.

The incorrect affiliation of Tirtha Nandi in this paper:

Scientist, Clinical Pharmacology and Pharmacometrics, Alnylam Pharmaceuticals. 101 Main Street, 10th floor, Cambridge, MA 02142.

The correct affiliation of Tirtha Nandi:

PhD Fellow, Temple University, Philadelphia, PA 19140

The original article can be found online at https://dx.doi.org/10.22159/ijap.2023v15i1.46553.