

Modeling patient poor compliance with Piecewise Deterministic Markov Models

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ABSTRACT :

We use a particular piecewise deterministic Markov process (PDMP) to model the drug concentration in the case of multiple intravenous doses and partial compliance situation. In this context, commonly we find the problem of variable time-dossing intervals. The model we allows to take into account the irregular drug intake times. This irregularity in drug input times have to be evaluated. We study the randomness of drug concentration generated by partial compliance to multiple intravenous doses. We are interested in two aspects of practical relevance : the *variability* of the concentration and the *regularity* of its limit probability distribution.

REFERENCE :

Fermin, L., Lévy Véhel, J. (2010) Variability and singularity arising from poor compliance in a pharmacodynamical model II : the multi-oral case, Preprint.

Fermin, L., Lévy Véhel, J. (2011) Modeling patient poor compliance in the multi-IV administration case with Piecewise Deterministic Markov Models, Preprint.