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Description and evaluation of pharmacokinetic processes and therapeutic responses: an interdisciplinary challenge for mathematics

For each patient, the pharmacokinetic profile is a key element to understand the therapeutic response that a dosing regimen is likely to generate. For a long time, the pharmacokinetic process has been empirically assessed by a simple-statistical way. The introduction of Population PK/PD methods aimed to shorten this drawback. However, refinement of sources of variability on drug response has always been the central problem in PK/PD studies. In this talk we try to update some pharmacokinetic principles by reconsidering the PK process within a random context. Moreover, we will discuss how to extend this research to investigate the corresponding therapeutic responses.

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