Drug Metab Drug Interact 2011;26(1):1 © 2011 by Walter de Gruyter • Berlin • New York. DOI 10.1515/DMDI.2011.105

Editorial

Pharmacogenomics and drug interactions. A specific journal

Gérard Siest

This journal is devoted to the reporting of studies on mechanisms by which drugs and other foreign compounds are metabolised, the mechanisms by which drugs can interact with each other as well as with biological systems, and the pharmacological and toxicological consequences of such metabolism and interactions.

Drug metabolism is the first critical pass when a drug is given to a patient. Pharmacogenetics allows us to understand the individual molecular make-up that contributes to a patient's response to the drug. A medicine is just an environmental challenge that elicits a response in certain ways, which can be explained by an individual's genetics. If we could understand that, we could know in advance what the likely response will be to that environmental challenge.

Profiling the safety of drugs is far more important than efficacy in terms of commercial competitive advantage and durable market impact.

The publication by Lazarou and colleagues (1) studying serious and fatal adverse drug reactions (ADRs) in hospital patients is often taken as a first reference to the problem of negative drug interactions. The high unexpected frequency, particularly the finding that fatal ADR is the fourth highest cause of death in the USA after heart disease, cancer and stroke, and the economic consequences laid the foundations for the development of a specific interest in this area. As cited in the paper, one of the drugs causing a major problem as a result of bleeding was warfarin. Three years later one member of our editorial board, Wolfgang Sadee and his team (2) suggested that pharmacogenetic analysis could reduce the incidence of ADRs and described a list of drug metabolising enzymes that might be involved.

A recent article from the FDA discussed the impact of pharmacogenomics on ADRs. Drug metabolism is responsible for a significant proportion of the causes through phase I polymorphism, and a knowledge of the underlying genetics can help identify individuals at risk of developing ADRs. Additionally, it is also important to study the genetics of cellular transporters (3).

The journal is happy to publish reports of studies on the mechanisms of inhibition/induction, as well as the more complex biochemical cascades and active metabolites of the parent drug, which could be a cause of ADRs in their own right (4). ADRs in children have been described and represent a significant public health concern (5), as the frequency of ADRs are increased mainly because the drugs are not formally studied in paediatric populations.

Drug Metabolism and Drug Interactions welcomes original papers describing studies covering this area in the clinical setting, as well as others focusing on experimental studies in tissue and cellular models, critical reviews of existing data, and case reports.

The breadth of expertise of the editorial board members, covering 13 countries in all continents, represents the scope of interest covered by this journal and its publication strategy. We look forward to receiving your papers.

In this first issue, we are publishing papers related to presentations made at the last "Biologie Prospective" colloquium (called Santorini Conference) in Santorini, which was very successful. A short summary of this event is also given at the end of this issue.

We also take the opportunity of this editorial to announce the 6th colloquium planned, in 2012 (29 September–1 October) in Santorini again. Keep the dates in mind!

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