The role of organic transporters in pharmacokinetics and nephrotoxicity of newer antiviral therapies

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Highly active antiretroviral therapy (HAART) and direct acting antiviral agents (DAAs) are key elementsin the effective pharmacotherapy of human immunodeficiency virus (HIV) and Hepatitis C virus (HCV) respectively.

These two chronic illnesses affect millions of persons worldwide at any given time, though only a select proportion has been eligible for successful treatment. With the development of newer, safer and more effective antiviral therapies it is expected that a greater proportion of those infected by HIV and/or HCV will have access to these life-saving therapies. However, it is also important to appreciate that this very population will also be subject to increased toxicities from these agents.

In this review by Drs. Mitema and Atta, a thorough outline of the published nephrotoxic effects of select new agents used in the management of HIV and HCV is provided, specifically commenting, where possible, on the role of specific epithelial organic transporters in explaining potential renal toxicities.

Drs. Mitema and Atta also tabulate the substrates, inhibitors, and additional distribution of organic transporters located in the basolateral and apical membranes of the proximal renal tubular epithelium (as well as other organs), providing a useful reference for clinicians to make inferences regarding potential drug-drug interactions.

More information: Donald Mitema et al. The Role of Organic Transporters in Pharmacokinetics and Nephrotoxicity of Newer Antiviral Therapies for HIV and Hepatitis C, *Current Drug Metabolism* (2015). DOI: 10.2174/1389200216041509021811 09