Special Issue

Crosslink Between Kidney Homeostasis and Xenobiotics Action

Message from the Guest Editors

Chronic kidney disease (CKD) represents a major public health problem worldwide. The worldwide prevalence of CKD is 13.4%, and the number of patients with end-stage kidney disease (ESKD) needing renal replacement therapy is estimated to be between 4.902 and 7.083 million. Chronic and acute kidney function decline is strictly related to environmental influence, including the action of xenobiotics. About 20%-30% of intensive care unit patients and 5% of hospitalized patients suffer from acute kidney injury secondary to a toxic insult, and 20% of these events are attributed to nephrotoxic compounds. Xenobiotics can damage kidneys not only by perturbing renal hemodynamics but also by promoting immune-mediated injury, stimulating the production of reactive intermediates, causing endothelial damage, or perturbing cellular homeostasis. At the same time, kidneys play a central role in the xenobiotics metabolism, promoting their clearance and eliminating about 32% of drugs through their action. This Special Issue aims to consider the bivalent influence of xenobiotics on patients with renal diseases and how the kidneys influence the xenobiotics metabolism.

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