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Inflammation-mediated Phenoconversion: A Potential Threat to COVID-19 Pharmacotherapy

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ABSTRACT

One of the important hallmarks of coronavirus disease 2019 (COVID-19) is the existence of severe inflammatory responses. Many reports indicated that inflammatory mediators might suppress the biological functions of some drug metabolizing enzymes and transporters, and therefore result in a transient mismatch between their genotype and phenotype expressions, a phenomenon which is called phenoconversion. The incidence might be clinically relevant to the COVID-19 patients with comorbidities. The patients are treated with multiple drugs that are prone to be altered pharmacokinetically by inflammation-mediated phenoconversion, leading to the modification of their effectiveness and safety. In this review, we discuss the regulation of inflammatory responses during COVID-19 infection and the evidence as well as potential mechanisms of inflammation-mediated

phenoconversion. We also provide possible clinical implications of such phenoconversion events as a potential threat in the management of COVID-19 patients.