PM1-019

A biological pharmacology network to secure the risk of drug–drug interaction with nirmatrelvir/ritonavir

F. Lemaitre[1], L. Boland[2], C. Tron[1], A. L. Ruelland[3], V. Lelong-Boulouard[4], S. Baklouti[5], F. Goirand[6], N. Gambier[7], C. Boglione-Kerrien[1], B. Franck[1], S. Lalanne[1], A. Devresse[8], S. Briol[8], J. De Greef[9], V. Haufroid[2] and M. Verdier[1]

[1]*Univ Rennes, CHU Rennes, INSERM, EHESP, IRSET (Institut de Recherche en Santé, Environnement et Travail)-UMR_S 1085, Rennes, France;* [2]*Clinical Chemistry Department, Cliniques Universitaires Saint-Luc, Uclouvain, Bruxelles, Belgium;* [3]*Clinical Pharmacology Department, Biology Institute, Nantes, France;* [4]*Service de Pharmacologie, Centre Hospitalo-Universitaire Caen-Normandie, Avenue de la Côte de Nacre, Caen, France;* [5]*Laboratoire de Pharmacocinétique et Toxicologie, IFB, Hôpital Purpan, 330 Avenue de Grande-Bretagne, Toulouse, France;* [6]*Laboratoire de Pharmacologie/Toxicologie, CHU de Dijon, France;* [7]*Université de Lorraine, CNRS, IMOPA, F-54000 Nancy, France; Laboratoire de Pharmacologie-Toxicologie, Pharmacovigilance & Ceipa, Bâtiment de Biologie Médicale et de Biopathologie, CHRU de Nancy-Brabois, 5 Rue du Morvan - Vandoeuvre-lès, Nancy, France;* [8]*Department of Nephrology, Cliniques Universitaires Saint-Luc, Uclouvain, Bruxelles, Belgium;* [9]*Department of Internal Medicine and Infectious Diseases, Cliniques Universitaires Saint-Luc, Uclouvain, Bruxelles, Belgium*

Introduction: Nirmatrelvir/ritonavir (Paxlovid©) is a protease inhibitor antiviral drug indicated in the treatment of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infections in high-risk patients for a severe disease. Unfortunately, ritonavir, used to boost nirmatrelvir pharmacokinetics, can also inhibit or induce the metabolism of other co-administered drugs substrates. This may lead to a subsequent risk of adverse drug reaction. In this study, we aimed at describing the expert advices provided by the biological pharmacology network of the SFPT (i.e., the therapeutic drug monitoring specialists working in the laboratories of pharmacology departments in France/Belgium).

Material and methods: From February to August 2022, we collected all specialized advices provided by 7 pharmacology departments participating in the SFPT biological pharmacology network (Brussels in Belgium and Caen, Dijon, Nantes, Nancy, Rennes, and Toulouse in France). We collected the following data: patient's age, date of nirmatrelvir/ritonavir initiation, clinical department requiring the expert advices, patient's treatments, and advice provided. These advices have been provided using SmPCs, DDI, and cohort studies retrieved in medical databases and the SFPT guidelines.

Results: One hundred and six expert advices on 753 drugs were provided during the 7 months of data collection. Patients originated from a transplantation department in 65% of the cases. Cardiac drugs (32%), immunosuppressive drugs (27%), and endocrine drugs (21%) were the most common requests. Advices were: treatment continuation, treatment discontinuation during the antiviral course, dosage adjustment, and treatment switch in 59%, 28%, 11%, and 1.6% of the cases, respectively. Only 2 advices (0.3%) were nirmatrelvir/ritonavir contra-indications. Drug monitoring was proposed in 10% of drugs.

Discussion/Conclusion: Expert advices provided by the biological pharmacology network of the SFPT allows securing the combination of nirmatrelvir/ritonavir with other concomitant drugs. Most of eligible patients to the antiviral drug can benefit from it despite the risk of drug–drug interaction. [1]

Reference:

[1] Lemaitre F et al. Management of drug–drug interactions with nirmatrelvir/ritonavir in patients treated for Covid-19: Guidelines from the French Society of Pharmacology and Therapeutics (SFPT). Therapie. 2022 Sep–Oct;77(5):509–521.

Keywords: metabolism, pharmacokinetics, therapeutic drug monitoring.