MANAGEMENT OF COVID-19 WITH NIRMATRELVIR/RITONAVIR AND TACROLIMUS MONITORING IN RENAL TRANSPLANTATION: A CASE REPORT

M. FALCÓN CUBILLO, P. SUÁREZ CASILLAS, M. MEJÍAS TRUEBA, A.B. GUISADO GIL, M.V. GIL NAVARRO, J.P. QUINTERO GARCÍA, E. HEVIA ÁLVAREZ, P. BARRIGA RODRÍGUEZ, S.J. LORA ESCOBAR
HOSPITAL VIRGEN DEL ROCÍO, PHARMACY DEPARMENT, SEVILLE, SPAIN

BACKGROUND AND IMPORTANCE

Nirmatrelvir/ritonavir (N/R) is an oral treatment for COVID-19 that reduces the risk of developing severe disease. Renal transplant patients are treated with immunosuppressants such as tacrolimus, that is metabolised by CYP43A as well as N/R. Co-administration with the irreversible CYP3A4 inhibitor ritonavir, is associated with **serious interactions and toxicity** in patients.

OBJETIVES

To describe the management of COVID-19 treatment with **N/R and tacrolimus** in renal transplant patients.

MATERIAL AND METHODS

Age: 49
Kidney transplantation = Feb-2019 → Chronic rejection = Apr-2023
Treatment: prednisone, mycophenolate and tacrolimus

In **June 2023** she was admitted to a tertiary hospital with a diagnosis of **COVID-19** and severe pneumonia, requiring supplemental oxygen. She had received 4 doses of the COVID-19 vaccine and was on **tacrolimus 5 mg/day**, with a creatinine of 1.7 mg/dl. Due to the interaction of tacrolimus with N/R, she was first treated with remdesivir.

RESULTS

Due to the lack of clinical improvement, the Infectious Diseases, Nephrology, and Pharmacy units decided to initiate **N/R adjusted to renal function** (eGRF 30-60 ml/min) at a dosage of 150/100 mg/12 hours for 5 days. **Tacrolimus was suspended** during the treatment, with diligent therapeutic drug monitoring (TDM).

TACROLIMUS CONCENTRATION target: 5-15 ng/ml

During N/R treatment = **6-7 ng/ml**
Four days after the end of N/R = **2.2 ng/mL**
REINTRODUCE TACROLIMUS = 2.5 mg daily

The infectious condition **was successfully resolved following N/R**, without any transplant rejection. However, the patient experienced a slight deterioration of creatinine levels, which returned to baseline values after restarting tacrolimus.

CONCLUSION AND RELEVANCE

Our experience contributes additional evidence indicating that **this interaction should not be considered a contraindication for N/R treatment** in COVID-19 pneumonia patients and can be effectively managed through **TDM of tacrolimus**. Nevertheless, further studies involving a larger patient population are necessary to establish more precise conclusions.

Hospital Universitario Virgen del Rocío

4CPS-025
L04-IMMUNOSUPPRESSANTS

eahp european association of hospital pharmacists