

# RESOURCES OPTIMISATION OF LOPINAVIR/RITONAVIR IN THE SANITARY EMERGENCY DUE TO SARS-CoV-2 IN A THIRD-LEVEL HOSPITAL IN THE ULTRA-PERIPHERY

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## WHAT WAS DONE?

A resources optimisation for lopinavir/ritonavir and several actions carried out to ensure the availability of the antiviral in intubated SARS-CoV-2 positive patients during the state of sanitary emergency.

## WHY WAS DONE?

Lopinavir/ritonavir is a HIV-1 and HIV-2 proteases inhibitor indicated for HIV. It was used in patients with a positive SARS-CoV-2 test after being recommended by the Chinese health authorities. The hospital protocol guideline was: 400/100mg every 12 hours orally. It was commercialized in both tablets and oral solution, which was reserved for patients intubated in the ICU and those who were not able to take tablets.

## HOW IT WAS DONE?

The Pharmacy Service designed a protocol to repackage lopinavir/ritonavir 80/20mg/mL solution in syringes containing the exact amount of drug dose (400/100mg in 5ml), for single use. Preparation and stability data were obtained from official sources as the Spanish Agency for Medicines and Health Products and the Spanish Society of Hospital Pharmacy.

## WHAT WAS ACHIEVED?

The solution is formulated on an alcoholic basis and there is an interaction with the polyurethane nasogastric tube because the polyurethane absorbs alcohol causing the catheter to swell and deteriorate, which is why, other services were notified to use polyvinyl chloride or silicone catheters. Likewise, the syringes used to repackage the solution were exclusive for oral administration, often used in pediatrics, with the aim of reducing medication administration errors, since it is not possible to connect parenteral injection needles to them.

These measures were intended to make the dispensing system as efficient as possible, as once the drug entered a positive test patient unit, was considered contaminated, therefore it could not be reused. Additionally, the fact that the hospital is located on an island made it even more difficult to acquire the medicine, given the supply problems nationwide, the great restriction of air and maritime traffic and loan limitations from other hospitals.

The measures adopted managed to ensure the availability of lopinavir/ritonavir solution in all admitted patients, optimizing the scarce availability of a solution medication whose presentation is formulated in multidose containers. By adding the use of syringes for exclusive oral use, administration errors were prevented.

## WHAT IS NEXT?

The following step will be to establish improvement processes and generate new protocols to be able to anticipate the lack of supply of medicines in case of a health emergency.