

Optimising Analgosedation in the Intensive Care Unit during the SARS-COV-2 Pandemic

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BACKGROUND AND IMPORTANCE

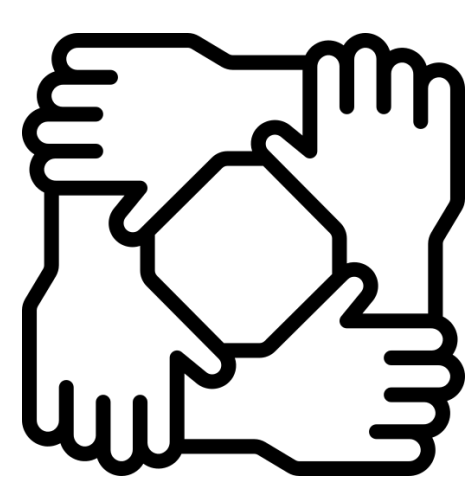
The SARS-COV-2 pandemic evidenced the need for expediting the dispensation and usage process, poorly automated, of narcotic drugs and for optimising the most commonly used perfusions available in the hospital (midazolam, dexmedetomidine, propofol, fentanyl).

With this intervention, significant improvements in efficacy and safety were expected, considering the fact that perfusions decrease the risk of infection, medication errors and the workload and exposure for nurses.

AIM AND OBJECTIVES

To **elaborate a physicochemical and microbiological stable fentanyl perfusion** and to **adapt the presentations** of drugs (midazolam, dexmedetomidine, propofol, fentanyl) used for analgosedation in Covid-19 patients admitted to the intensive care unit.

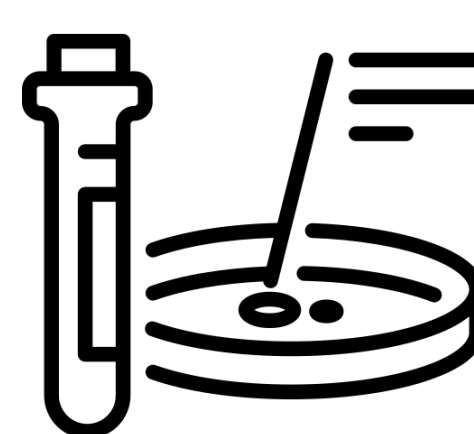
MATERIALS AND METHODS



1. A **multidisciplinary team** formed by intensive care doctors, nurses and clinical pharmacists was created in October 2020 to discuss areas of improvement and effort optimisation.



2. All midazolam and propofol presentations were changed for others of **larger volume** available on the market. A dexmedetomidine perfusion 2000mg/250mL was standardized thanks to previous stability data collected.



3. A new **fentanyl perfusion** was prepared and validated in sterile conditions after a systematic literature review, microbiological controls in TSB and thioglycolate broths and a microbiological risk matrix were done.



4. Fentanyl perfusions were stocked in Pharmacy and **individually dispensed** according to the infusion speed of each patient. Control numbers were assigned to every preparation to maintain narcotics' traceability.

RESULTS

- Each perfusion consisted of **1500mcg of fentanyl (10 vials 150mcg/3ml=1 perfusion) diluted in 100mL** of sodium chloride 0.9%.
- The final stability given was **30 days at room temperature** (all culture replicates in TSB and thioglycollate broths at days 0, 9 and 30 were negative).
- The daily number of preparations depended on the epidemiology of the disease. However, a medium value of **13 perfusions** were dispensed up to a total of 21 ICU beds.

CONCLUSION AND RELEVANCE

This model can be extrapolated to other Pharmacy Services as long as volumetric pumps, trained professionals and horizontal laminar flow cabinets are available. The intervention met some of the demands created during the pandemic and helped slightly attenuating the pressure on healthcare professionals.