CASE-CONTROL STUDY ON THE ASSOCIATION BETWEEN NOSOCOMIAL BLOODSTREAM INFECTIONS AND GLUCOCORTICOIDS, TOCILIZUMAB, SYSTEMIC ANTIBIOTICS, MECHANICAL VENTILATION AND LENGTH OF HOSPITAL STAY IN COVID-19 HOSPITALISED PATIENTS

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Background and importance

Hospitalised patients with COVID-19 are often exposed to immunosuppressive and anti-inflammatory drugs in addition to systemic antibiotic treatments. Nosocomial bloodstream infections(nBSI) have been associated with the need for mechanical ventilation or venous catheter insertion. However, there is current controversy regarding the influence of immunosuppressive, anti-inflammatory and antimicrobial drugs on nBSI occurrence.

Aim and objectives

Assess the association between glucocorticoids, tocilizumab, systemic antibiotics and nonpharmacologic health interventions and the occurrence of nBSI in hospitalised patients with COVID-19.

Material and Methods

Case–control study including cases of nBSI episodes in adult inpatients with SARS-CoV-2 pneumonia over a one-year period and controls without nBSI.

Bivariable Analysis and Multivariable logistic regression

Results

n=100 → **50 cases**, **50 controls**

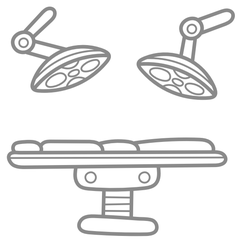
Mean age 63.0±12,4

66% ♂

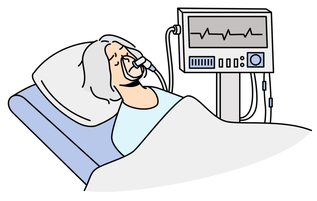
Mean Charlson index 2.3±2.1

Bivariable Analysis

Length of hospital stay (OR 1.173, p<0.001)



Surgeries (OR 10.80, p=0.008)



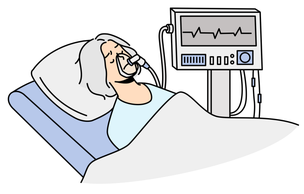
Mechanical ventilation (OR 8.10, p<0.001)

Antibiotic and glucocorticoids therapy days (OR 1.166, p=0.017 and OR 3.20, p=0.010)

Tocilizumab (OR 9.33, p=0.017).

Multivariable Analysis

Length of hospital stay
aOR 1.231, 95%CI:1.104-1.371, p<0.001



Mechanical ventilation
aOR 4.892, 95%CI:1.206-19.845, p=0.026

→ **Independent risk factors for nBSI**

Conclusions and relevance

This study found nBSI independently associated with mechanical ventilation and length of hospital stay and did not find an association between nBSI and the pharmacological interventions assessed. However, given the bivariate association between these pharmacological interventions and nBSI, and previous inconclusive literature on the effects of these treatments on bacterial and fungal infections occurrence, further investigation with a larger sample is required

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