

Category : **Infections + antimicrobials**

**A236 - The rate of secondary infections and diagnostic challenges in critically ill patients with covid-19**

**G McCreath<sup>1</sup>; MR Ralston<sup>2</sup>; AJ Roe<sup>1</sup>; MJ Watson<sup>3</sup>; MAB Sim<sup>3</sup>**

<sup>1</sup>*Institute of Infection, Immunity & Inflammation, University of Glasgow, Glasgow, United Kingdom,* <sup>2</sup>*Institute of Cardiovascular & Medical Science, University of Glasgow, Glasgow, United Kingdom,* <sup>3</sup>*School of Medicine, Dentistry & Nursing, College of Medical, Veterinary & Life Sciences, University of Glasgow, Glasgow, United Kingdom*

**Introduction:**

Patients admitted to intensive care with severe SARS-CoV-2 infection frequently present with sepsis. These patients are at a higher risk of developing a secondary infection, but this can be difficult to distinguish from the primary viral infection [1]. Liberal use of broad-spectrum antibiotics can lead to proliferation of antimicrobial resistant organisms. We aimed to identify the rates of bacterial secondary infections and antimicrobial usage in critically ill COVID-19 patients.

**Methods:**

We performed a retrospective review of case records for patients admitted to critical care from three hospitals in the Greater Glasgow and Clyde Health Board, Scotland. Patients with confirmed SARS-CoV-2 infection admitted to high dependency or intensive care were eligible. We collected data on background patient demographics, comorbidities, admission SOFA scores, antimicrobial usage, and positive microbiological cultures from within a 10-day period. Cultured organisms that were unlikely to be clinically significant were excluded.

**Results:**

Records for 105 patients admitted between December 2020 and September 2021 were reviewed. At admission to critical care, 100% met the criteria for sepsis in accordance with the Sepsis-3 International Consensus definition, and 33% went on to develop for septic shock [2]. The mortality rate was 34%. All patients received corticosteroids, and 74% were treated with an IL-6 receptor antagonist. Half of the patients had at least one clinically significant positive microbial culture, however a much higher proportion (73%) were treated with antibiotics.

**Conclusion:**

Secondary infections can be difficult to diagnose in the presence of severe COVID-19 disease, with a disproportionately high use of antibiotics relative to positive cultures. Additional diagnostic tools would be useful in this patient population to aid in antimicrobial stewardship.

**References:**

[1] C. D. Russell et al. *The Lancet Microbe* 2(8):e354-e365, 2021.

[2] M. Singer et al. *JAMA*, 315(8):801–810, 2016.