

# Is the risk worth the reward?

## The incidence of infections in COVID-19 patients within three months of receiving tocilizumab

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### Introduction

- **SARS-CoV-2 virus** causes COVID-19 infection
  - Leads to **immune dysregulation** & an exaggerated inflammatory response
  - High levels of **interleukin-6 (IL-6)**, a proinflammatory cytokine
- IL-6 antagonists including **tocilizumab** and **sarilumab** are licensed in the treatment of critically ill COVID-19 patients
- Hypothesised risk of **immunosuppression** post IL-6 inhibitor, lasting up to 90 days
- Clinicians advised to be aware of the risk of superimposed infections

### Aims

To examine the incidence of fungal and bacterial infection in the 90 days post administration of tocilizumab.

### Methods

- **Single centre study:** Mater Infirmorum Hospital Belfast
- **45** patients were administered tocilizumab between January - March 2021
- **Retrospective analysis** at 90 days post tocilizumab dose using the Electronic Care Record

#### Outcomes assessed:

1. Antimicrobial prescriptions
2. Infection-related readmissions to hospital
3. Positive microbiological investigations

### Results

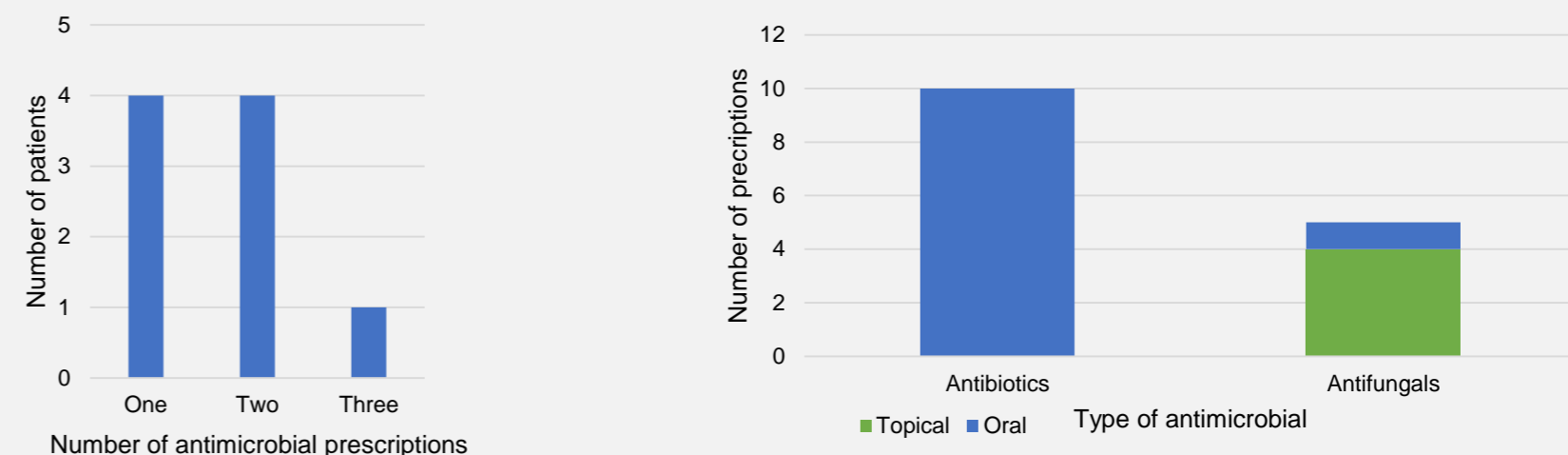


Figure 1 (left): bar chart demonstrating number of antimicrobial prescriptions per patient; Figure 2 (right): bar chart demonstrating type of antimicrobial and route prescribed.

- 45 patients included in analysis – **42** patients alive at 90 days post tocilizumab administration
  - **1** patient (2.4%) had a prolonged ICU admission developing **invasive aspergillosis**
  - Also demonstrated positive sputum and urine cultures with **enterobacter cloacae**
  - **9** patients received antimicrobials (**21.4%**) from their **GP**
- **No hospital readmissions related to infection**
- **No other positive microbiological investigations**

### Discussion

Empiric antimicrobial prescriptions in the absence of positive microbiological investigations may be a **poor surrogate** measure for infection.

Reassuring that the majority of patients (78.6%) didn't require antimicrobials and those who did could be managed in the **community** without requiring hospital admission

In terms of **risk versus benefit**, this study supports current the current evidence that tocilizumab is a safe treatment for those with severe COVID-19 pneumonitis

### References

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