

# RETREATMENT OF PERSISTENT COVID-19 IN IMMUNOCOMPROMISED PATIENTS: A CLINICAL CASE SERIES

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## BACKGROUND

Research into management of coronavirus disease 2019 (COVID-19) in heavily immunocompromised patients remains scarce despite their increased risk of severe and prolonged infection. No large studies have been performed to investigate retreatment of COVID-19 in this vulnerable cohort. This study describes our experience retreating COVID-19 in immunocompromised patients and their outcomes.

## METHODS

Significantly immunocompromised patients with persistent or relapsing clinical evidence of COVID-19 infection admitted between March and June 2022 to a tertiary hospital in Western Australia were retrospectively reviewed. The timeline of retreatment and associated biochemical and clinical outcomes were extracted. National guidelines were followed for initial treatment and subsequent decisions made by the multidisciplinary specialist team.

## RESULTS

Seven immunocompromised patients with persistent COVID-19 retreated with SARS-CoV-2 therapies were included in the study. The mean age of the cohort was 64.4 years (range 52-79 years) and four of the seven (57%) patients were male. Three patients had haematological malignancies, three were solid-organ transplant recipients and one patient was on biological immune-modulating therapy. All patients had persistent infection following short course antiviral monotherapy. The average intensive care unit length of stay was only 2 days (range 0-11 days). Six patients clinically and biochemically recovered with retreatment and survived to be discharged home. In the case of the single inpatient death, COVID-19 was not the primary cause. Effective treatment strategies included the use of immunomodulatory agents as adjuncts to remdesivir and extended oral antiviral courses (range 10-28 days) to consolidate intravenous therapy.

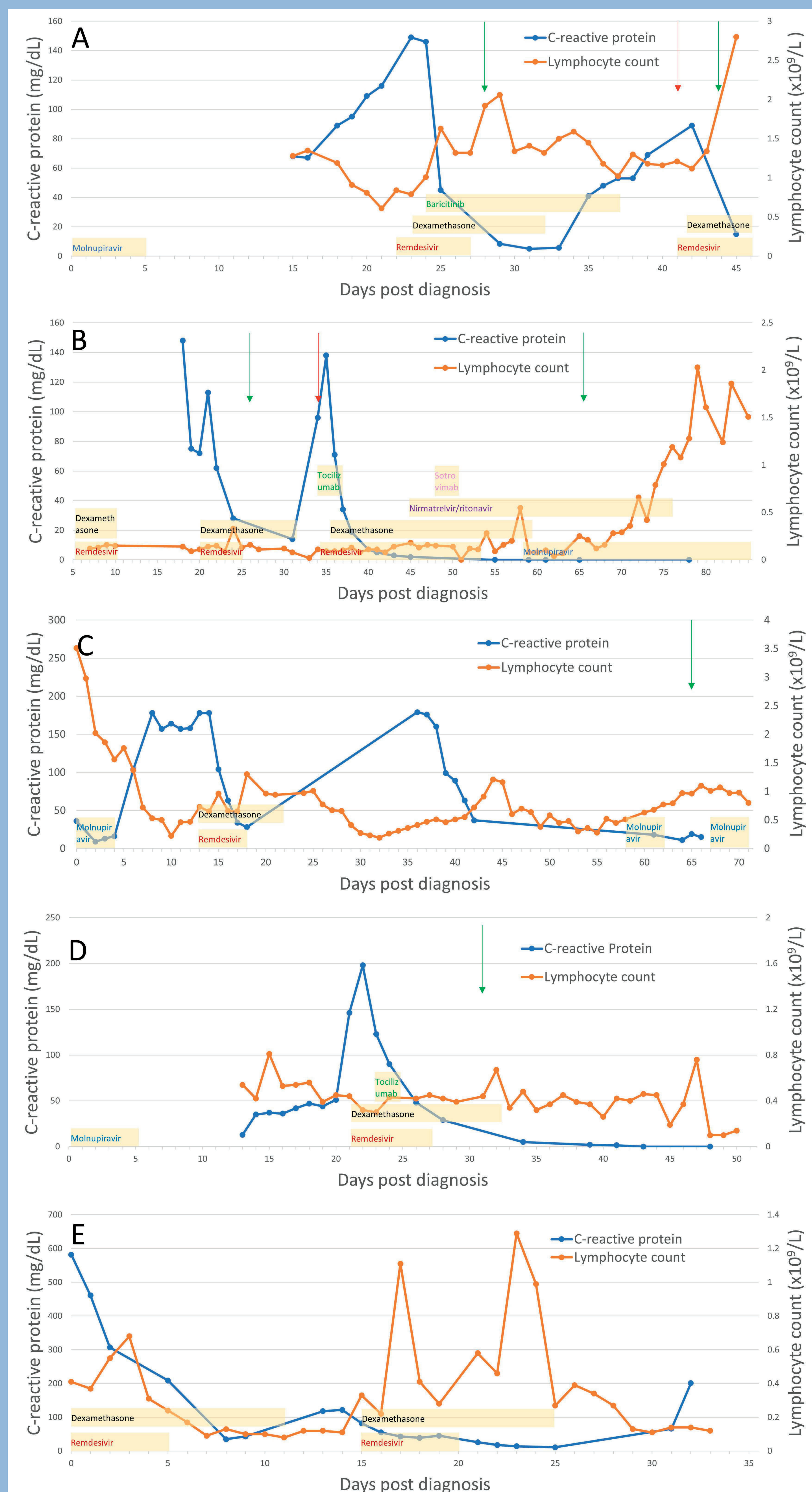


Fig 1. Timelines of blood results, treatments and tests for SARS-CoV-2 for patients with persistent COVID-19 and hospital length of stay greater than 28 days. Green arrows indicate second consecutive negative RAT. Red arrows indicate a change in RAT status to positive.

## CONCLUSION

This case series reinforces concerns regarding relapse following short course antiviral therapy and reports the successful use of multimodal strategies including longer treatment duration and combination regimens in cases requiring retreatment. Our experiences inform future clinician-guided decisions and demonstrate the need for experimental studies in this area.