

# ANTI-CD20 TREATMENT INDUCED NEUTROPENIA: A RETROSPECTIVE CASE SERIES

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## OBJECTIVES

B-cell depleting antibody therapies targeting CD20 antigen, while effective, may occasionally lead to neutropenia. This study aims to describe clinical features, characteristics and management of neutropenia in patients treated with anti-CD20 agents.

## MATERIALS

We included patients who started treatment with Ocrelizumab, Rituximab and Ofatumumab between June 2018 and February 2025; their blood and clinical parameters were collected until March 2025. Among them, we analyzed patients who developed moderate or severe neutropenia.

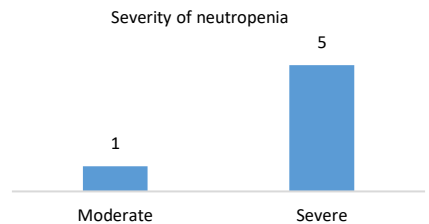
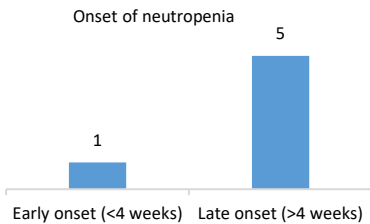
## METHODS

We conducted a retrospective, single-center study. We considered:

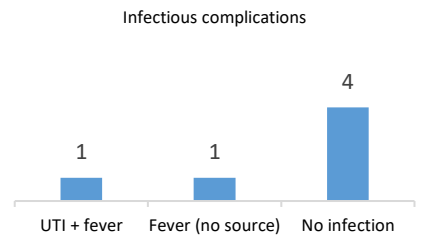
- moderate neutropenia as an absolute neutrophil count (ANC) between  $0.5-1.0 \times 10^9/L$
- severe neutropenia as an ANC below  $0.5 \times 10^9/L$ .

## RESULTS

Among a total of 171 patients, 6 of them developed moderate or severe neutropenia. Moderate to severe neutropenia occurred in 4 patients treated with Ocrelizumab and 2 treated with Rituximab.



The majority of them were treated with granulocyte-colony stimulating factor (G-CSF). In 3 patients neutropenia reoccurred. In 2 of them treatment with Ocrelizumab was discontinued and Ofatumumab was started. The other 3 patients didn't experience any recurrence of neutropenia. One of them discontinued the treatment considering risk-benefit balance.



## DISCUSSION

Neutropenia is a rare complication of anti-CD20 treatment. The exact pathogenic mechanism of this adverse effect has not been clearly understood and its management is still a matter of debate. In our case series, we observed that the majority of patients experienced a late-onset neutropenia and required treatment with G-CSF in most of the cases.

## CONCLUSIONS

Our findings offer a practical insight into the occurrence and management of neutropenia in patients undergoing anti-CD20 therapy.

## DISCLOSURES

The authors have nothing to disclose.

## BIBLIOGRAPHY

Rossi, Dinoto et al. 'Neutropenia complicating anti-CD20 treatment in patients with multiple sclerosis: A retrospective case series and a systematic review of reported cases' - *Multiple Sclerosis and Related Disorders* - 2022 - 68 - 104090.