

The first case series exclusively reporting early onset neutropenia in rituximab treated rheumatoid arthritis patients

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Abstract

Background: Rituximab is a chimeric monoclonal anti-CD20 antibody, used in the management of immune-mediated diseases. Although known to have a favourable safety profile, a few serious complications associated with its use have recently come to light, including early-onset neutropenia (EON), defined as neutropenia having occurred within four weeks of rituximab treatment. It is a rare phenomenon in the scientific literature, with only seven case reports, to the best of our knowledge, to having been reported so far. These include patients with systemic lupus erythematosus (SLE), neuromyelitis optica and bullous pemphigoid. This case series will therefore be the first to exclusively report post-rituximab EON in rheumatoid arthritis (RA) patients.

Methods: Three patient records were retrospectively analysed, with particular attention to their medication history, blood counts and biopsy results.

Results: All three cases, confirmed to have seropositive RA, developed EON at 4, 11 and 14-days post-infusion respectively. They were treated at a dose of 2g over two infusions per six-monthly cycle. Two out of three were admitted with febrile neutropenia, and subsequently treated with G-CSF (granulocyte-colony stimulating factor) and the other resolved spontaneously soon after. The two patients admitted were also found to be ANA (anti-nuclear antibodies) positive, but not the third. All three cases were also reported to have a background of intermittent neutropenia on previous DMARD (disease modifying anti-rheumatic drug) therapy, discontinued prior to rituximab.

Conclusion: EON is a rare but serious complication of rituximab therapy, that can occur after any treatment cycle, as it can predispose to life-threatening events such as neutropenic sepsis. It is therefore critical for clinicians to act with caution when prescribing rituximab and implement early and regular blood monitoring to quickly remediate or prevent it altogether.