Case study of a transient neutropenia in the immediate post infusion phase following first pulse of alemtuzumab (Lemtrada).

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Introduction

This is a case study of a 17-year old female with relapsing remitting multiple sclerosis, who developed alemtuzumab related neutropenia in the immediate post infusion period.

Clinical presentation

November 2012  numbness in lower back and difficulty to walk. Within 4 to 6 weeks her walking significantly improved.

In summer 2013 she suffered with multiple falls and noticed she was more clumsy and having balance difficulty. Within a few months her symptoms gradually improved.

In February 2015 she developed double vision and by March 2015 there was clear evidence of intranuclear ophthalmplegia.

Neutropenia

25/08/2015  DMT Monitoring clinic, 4weeks post infusion. Bloods: neutropenia and lymphopenia. WBC1.1, Neutrophils 0.6, lymphocytes 0.2. Advice: continue acyclovir 400mg for at least next 2 weeks (advice considered, opted out).

Blood Repeated 28/08/2015: WBC 0.9, Neutrophils 0.4, lymphocytes 0.2.

Advise given: bloods to be repeated in 1 week, patient asymptomatic.

Haematology team advised G-CSF (Granulocyte colony-stimulating factor)³ ⁴ if neutropenia persisting after 1 week, home isolation in the interim, if pyrexial or sign of infection to be admitted to hospital isolation and antibiotic treatment.

04/09/2015:Resolution of Neutropenia.

Patient’s DMT choice: opted for Lemtrada.

1st dose given 20/07/2015, 12mg for 5 days, IVMP first 3 days prior to infusion.

Day 3 IV Lemtrada, small pustular lesion with some erythema in dermatomal distribution on left arm, itchy.

Day 4, pre 4th infusion: Disturbed sleep during the night, breakthrough rash present small on left bicep & right forearm. Observation NEWS =2 due to systolic on 98 mm/Hg. Patient feels well, did become emotional yesterday, this may have been heightened by IVMP.

06/08/2015: Patients mother called, 2 day history of discomfort to both arms / shoulders on movement, more so on left side. Could move arm passively without discomfort, when against resistance then developed pain. No infections. Patient had cleaned her room the day before & may have over exerted self. Explained that myalgia has been reported post Lemtrada & to self monitor this.

Discussion

Following further investigation, one case of febrile neutropenia reported in phase III clinical trial of Alemzutuzam³. We also found similar cases reported in a haematology journal, as it is licensed for Non-Hodgkin’s Lymphoma and Chronic Lymphocytic Leukaemia. There is a common belief that neutrophils do not express CD52, which is the main mechanism of action of Alemtuzumab. As neutropenia cases have been identified in haematology patients but not in MS patients, we would like to raise awareness of this rare but potentially serious side effect¹.

Adverse events have been reported via the MHRA yellow card system.

References