

## Treatment Efficacy of Biosimilar Rituximab (Truxima®) Compared to the originator (Mabthera®) in Patients with ANCA associated Vasculitis

Dr Pek Ghe Tan<sup>1</sup>, Dr Jennifer O'Brien<sup>1</sup>, Ms Rachna Bedi<sup>1</sup>, Dr Megan Griffith<sup>1,2</sup>, Dr Marie Condon<sup>1</sup>, Dr Tom Cairns<sup>1</sup>, Prof Jeremy Levy<sup>1</sup>, Prof Charles Pusey<sup>1,2</sup>, Dr Stephen P McAdoo<sup>1,2</sup>

<sup>1</sup>Imperial College Healthcare Nhs Trust, London, United Kingdom, <sup>2</sup>Centre for Inflammatory Disease, Imperial College, London, United Kingdom

### Background and Aims:

Truxima is a biosimilar version of rituximab. It was licensed & launched in the United Kingdom in April 2017. A biosimilar medicine is made to be highly similar in quality, safety and efficacy to existing licensed "reference" biological medicine and the cost is often significantly lower. A recent systematic review showed comparable long-term efficacy and safety of biosimilar rituximab to the originator drug in treatment of rheumatoid arthritis and non-Hodgkin's lymphoma. Fewer data are available in regards to the efficacy of biosimilar rituximab in treatment of antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV). A retrospective study was thus conducted in our centre to examine the efficacy of Truxima when compared to the reference rituximab (MabThera) in the treatment of patients with AAV.

### Method:

All patients with new or relapsing AAV who received first ever rituximab therapy between 1/1/2016 and 31/12/2018 were identified via hospital dispensing database. Patients were stratified into Truxima or MabThera treatment group depending on the version of rituximab administered. Primary outcomes that were assessed include: time to B cell depletion (defined as absolute B cell count (ABC)  $\leq 10$ ) and repletion (i.e ABC  $>10$  and  $>20$ ); time to antimyeloperoxidase(MPO)/antiproteinase 3(PR3)-ANCA negativity; Secondary outcomes assessed include: overall survival, time to major relapse (defined as relapse requiring further course of rituximab for remission induction); adverse events including episodes of neutropenia, hypogammaglobulinemia and major infusion reactions. Subgroup analysis in patients who received concomitant cyclophosphamide and rituximab or other induction therapy was performed to examine if it impacts on the treatment efficacy.

### Results:

59 and 60 patients received Truxima and MabThera respectively for treatment of new or relapsing AAV. The baseline characteristic (age, gender, entry estimated Glomerular Filtration Rate, proportion of patients received concomitant cyclophosphamide, ANCA serology and organ involvement) of both group were comparable. All patients achieved clinical remission following induction treatment. Using Kaplan Meier analysis and log rank test, no difference was identified in time to B cell depletion or repletion (Figure 1&2), MPO/PR3-ANCA negativity (Figure 3), overall survival or major relapses requiring further rituximab as induction therapy.

Treatment efficacy of Truxima and MabThera did not differ in subgroup analysis. However we observed that patients who received concurrent cyclophosphamide during induction therapy achieved MPO/PR3-ANCA negativity more rapidly compared to those who did not irrespective of the version of rituximab received. No difference in adverse events such as major infusion reactions was seen in either group upon first rituximab exposure. Two patients in each group developed reactions following repeated dosing of rituximab.

### Conclusion:

Biosimilar rituximab Truxima appears to have comparable treatment efficacy compared to the reference drug in our cohort of patients with AAV.