The ITP Support Association Platelet Reprint Series

No. 33 – Sustained responses with TPO

Platelet article reprinted from: **Dec 2015**

Title: **Exciting Study Findings: Sustained responses with TPO drugs**

Author: **Professor A.C. Newland**

Following the early studies using the thrombopoietin agonists (agents that attach to the thrombopoietin receptor and stimulate platelet production) there was much interest when it was seen that platelet increases were seen in around 80% of patients with relapsed and refractory ITP. This was much higher than expected with any of the other traditional treatments that were usually used at this stage in the disease. It was seen with both agents licensed: Romiplostim (Nplate) and Eltrombopag (Revolade).

From the experience gained with these early studies it was felt however that once the treatment was stopped platelets would fall back to their original level, and in about 10% of patients may even fall to lower levels. The criticism was levelled that these treatments would have to be given continuously leading to significant costs.

However, we and others were becoming aware of individual patients who maintained their platelet counts following treatment and we collected 4 such responders and presented them at the European Hematology Association meeting in 2011. Professor Jim Bussel in the USA also noticed a similar pattern and presented more patients at the American Society of Hematology later that year.

On the basis of these interesting observations we decided to look at those patients we had treated at Barts in our early studies. We analysed 21 patients with relapsed or refractory disease who had been treated with Romiplostim. 19 of these 21 had a platelet response and 5 (24%) went on to have a long term, sustained remission, which we defined as 6 months off all treatment with a stable count. Some of these patients had not responded to any previous treatment options and some continue in remission for 4 years plus without treatment. Drew Provan and I reported these in 2014. Other clinicians treating ITP have confirmed these findings showing long term responses off treatment in 25 to 33% of patients. Although the majority were in patients receiving Romiplostim there has been at least one large published study showing similar responses in patients receiving Eltrombopag.

As most of these studies were retrospective, reviewing patients already treated, it was decided that we should formally study patients prospectively and used the Amgen study of patients receiving Romiplostim who had failed primary treatments (steroids, intravenous immunoglobulin and anti-D immunoglobulin) and were treated as early as 6 months. The intention was to treat them for 12 months before stopping treatment. 75 patients were entered into this study and we saw overall response rates in over 90% of the patients and of these 24 (32%) went into a sustained remission, defined in the same way as previously. If the platelet count was maintained earlier than the 12 months then the Romiplostim was reduced and stopped, and this was possible in the great majority of responders. No significant side effects were seen in this study and only one patient required splenectomy because of failed treatment. These findings will be published in the British Journal of Haematology.

These findings are quite exciting as in these groups of adults in the progressive or chronic phase of the disease spontaneous remissions are rare and are certainly not in the range seen in these studies. This suggests that the thrombopoietins may achieve more than raising the platelet count and may actually impact on the immune response achieving a remission in this very difficult group. Further studies are underway to confirm these findings and to look at the mechanisms of action.