Safety of Accelerated Infliximab Infusion in Inflammatory Bowel Disease in a District General Hospital

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Introduction

- Dorset County Hospital Foundation Trust serves a population of around 330,000 with 1,325 active Inflammatory Bowel Disease (IBD) patients. A small percentage of these patients receive infliximab infusions for disease control.
- The NICE guideline as according to the British National Formulary states that infliximab infusion should follow the following infusion schedule:\[2\]:
  - 5 infusions over 2 hours (hr) with 2 hr of post-infusion monitoring
  - Subsequent infusions delivered over 1 hr with 1 hr of monitoring.
- There are published data supporting accelerated infusion regimen over 30 minutes (min)\[3\]. Nonetheless, the literature available on published data in the UK is very limited.
- Our local policy dictates that after 10 incident-free infusions, we administer:
  - Infusion over 30 min with 30-min observation
- Recently a patient established on infliximab from a tertiary centre, where she was given maintenance infusion over 1 hr as per NICE guideline, challenged our local policy of accelerated infusion, seeking assurance of its safety.
- Through this quality improvement project, we hope to provide her and other patients alike local evidence that the 30 min accelerated infusions practiced in this hospital are safe and have no higher adverse reactions than the standard 1 hr maintenance infusions.
- The secondary aim is to improve the efficiency of the unit. Reducing nursing time can increase the overall capacity of the unit without compromising patient safety. A shorter stay in the unit can also improve patients’ overall satisfaction in hospital.

Methods

- Using the local patient management system which supports the IBD registry data tool, we retrospectively identified all patients with IBD who underwent infliximab infusions in 2017.
- The adverse reactions we look for are either anaphylactic or anaphylactoid in nature which are life-threatening and preclude recommencement and continuation of infusion. We did not take into account milder symptoms such as nausea or lightheadedness which settled with administration of intravenous hydrocortisone and chlorphenamine allowing for completion of infusion.
- All the patients followed our standard protocol:
  - five infusions over 2 hr with 2 hr of monitoring,
  - the next five over 1 hr with 1 hr monitoring,
  - subsequent infusions over 30 min with 30 min of monitoring.

Results

- From the IBD registry data, we found there were 202 infusions given to 39 patients with IBD over the last 12 months in 2017 (see Figure 1):
  - Table 1: Number of patients with IBD classification receiving infliximab infusions

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number of patients</th>
</tr>
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<tbody>
<tr>
<td>Crohn's</td>
<td>30</td>
</tr>
<tr>
<td>Ulcerative Colitis</td>
<td>1</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>1</td>
</tr>
</tbody>
</table>

- Of the 202 infusions, 59 were induction infusions, which were administered over 2 hr. The rest were maintenance infusion where 10 were given over 1 hr, with 133 infusions over 30 min.
- Of all these, there was only 1 significant infliximab infusion related reaction which was reported in the induction phase (see Figure 1).
  - Of the 59 induction infusions, 133 infusions over 30 min.
  - Results in total 152 infusions which were safe with 30 min monitoring.
  - The reaction occurred within 10 min of commencement of the infusion and was anaphylactoid in nature (rash and swelling). The patient was taken off infliximab and was trialed on ustekinumab, which he had responded well to without further reactions.
  - The remaining 201 infusions had no significant adverse reactions, including all of the accelerated infusions (see Figure 2). Hence we demonstrated that the patients had no significant reactions while on the induction phase, then it was safe to undertake the accelerated 30 min infusion as all of our accelerated infusions were reaction free.

- This finding shows us that accelerated infliximab infusions over 30 min were safe and the 30 min observation time was adequate. No delayed hypersensitivity reactions have been reported so far.
- With regards to improving the efficiency of the unit, the accelerated infusions saved a total of 1 hr per patient visit to the infusion unit. This allowed the Trust to free up 13 days of infusion time per annum on our current case load, enabling the Trust to save cost, without compromising patient safety.
- Although an assessment into patient satisfaction is required, we believe patient care is likely to be enhanced by reducing the time spent in hospital for IBD patients who require long-term maintenance infusions.

Conclusion

- Accelerated infliximab infusions over 30 min and 30-min observation time are safe and the time saved enhances our unit’s capacity, consistent with the wider evidence available in the literature\[4\].
- Anecdotally, we have carried out this local policy without any incidence of infliximab-related adverse reactions in the last 8 years. The general feedback from most of our patients have been largely satisfactory.
- If other infusion units across the country also share the same safety profile of accelerated infliximab infusions, then the national guideline can be updated, resulting in an overall increase in the efficiency of infusion units and overall patient satisfaction in the UK.

References


Declaraton: There is no relationship between any of the authors with the industry pertinent to this poster.