

Proactive High dose Iron Therapy- Are we there yet? A closer look at 2 dialysis units following the Publication of PIVOTAL.

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Introduction

Renal Anaemia management has been based around dosing of Iron and erythropoiesis stimulating agents (ESAs) for the last 30 years. The latest practice changing study, PIVOTAL, showed that a proactive high dose iron regime (median Venofer dose 264mg/month) resulted in reduced requirements for ESAs and improved risk of death and non-fatal cardiovascular events, when compared to a reactive low-iron dose regime (median Venofer dose 145mg/month)

We look at how this has impacted on day-today practice in two satellite haemodialysis units before and after publication of PIVOTAL, with no formal change made to iron dosing algorithms.

Methods

We retrospectively examined 2 dialysis units over a 1 year period from October 2018-2019, bridging the publication of PIVOTAL. We compared iron dosing, ESA requirements, haemoglobin and ferritin levels at the start and the end of this period. We excluded patients who were intolerant of iron or had active cancer diagnoses or chronic infection.

Results

- 13 patients were included from Dialysis Unit 1 and 15 patients from Dialysis Unit 2.
- Monthly mean intravenous iron (Diafer) dosing in Unit 1 increased from 220mg in 2018 to 293mg in 2019, with mean ferritin levels rising from 332ng/l to 576ng/l
- Monthly mean Darbepoetin Alfa dose in Unit 1 decreased from 73mcg to 56mcg
- Monthly mean iron dose in Unit 2 was similar; 200mg in 2018 and 220mg in 2019, although mean ferritin levels rose from 351ng/l to 465ng/l
- Monthly mean Darbepoetin Alfa dose in Unit 2 increased from 130mcg in 2018 to 180mcg in 2019
- The mean haemoglobin was identical for both units at the beginning and end of the study period at 110g/l
- No patients included received additional red blood cell transfusions.

Discussion

These results show that in Unit 1, increasing iron doses resulted in reducing ESA requirements and a stable haemoglobin, suggesting that (at least) the laboratory result and drug dosing findings seen in PIVOTAL are reproducible outside of the trial environment.

In unit 2, findings were less clear cut. There was a more modest increase in the mean iron dose used, with an increase rather than decrease in ESA dose seen. There are likely to be patient factors responsible for this, but there may be physician-level differences as well.

We note that Unit 1 is run by a nephrologist who was a Principal Investigator for PIVOTAL, hence with trial experience of high dose IV iron therapy and prompt access to the trial results; we suggest that this accounts for some of the difference between the two units, and ongoing work includes ensuring treatment pathways are robust and evidence based.

Conclusion

High dose proactive iron therapy can reduce ESA requirements outside the trial environment, however practices still vary even within a single department.