Dosing intravenous iron: keep it simple

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Background

Haemoglobin (Hb) concentration remains the gold standard for managing iron deficiency anaemia (IDA) as a rise in Hb concentration correlates to both a response to iron treatment as well as the resolution of anaemia[1,2].
Ferric carboxymaltose (FC) and Iron polymaltose (IP) are commonly used IV iron infusions in Australian hospitals. IP and FC can be dosed according to the Ganzoni formula or the Simplified dosing method.[3] The Ganzoni formula has been criticised as inconvenient, inaccurate or simply unnecessarily complex.[4] Also IV Iron has also been linked to adverse effects such as hypophosphataemia.[4] While a simplified dosing schedule has also been proposed[4], clinicians often use a fixed low dose eg 1000mg, which is often less than that recommended by both Ganzoni and simplified dosing schedule.

Aim of the study

The aim of this study is to explore whether use of the Ganzoni dosing, simplified dosing schedule or fixed low dose will lead to the greatest improvement in Hb concentration in patients with IDA who are administered intravenous iron infusions.

Method

The study was retrospective observational study conducted at a tertiary hospital in Australia, between February and March 2019. Patients with Hb concentrations within one month prior to, and within 4-12 weeks after receiving the intravenous iron infusion were audited. Patients with an eGFR ‹ 40 mL/minute or who had received erythropoiesis stimulating agents during the time of the study were excluded.

Results

A total of 85 patients were recruited into the study. Over all there was no significant difference in Hb change between the dosing strategies.
The increase in Hb was similar in the Ganzoni-dosed and simplified-dosed group, median 14 g/L vs. 13 g/L respectively (Figure 1). Ganzoni dosing did not show any improvements when compared to fixed low dose (Figure 2).

Figure 1

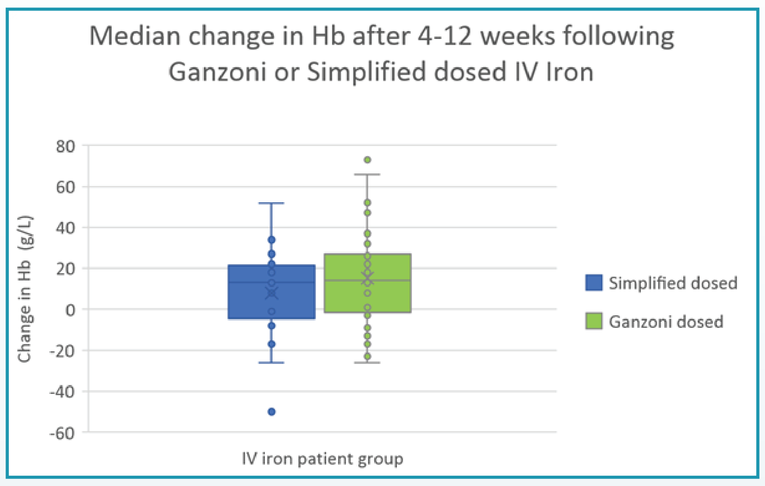
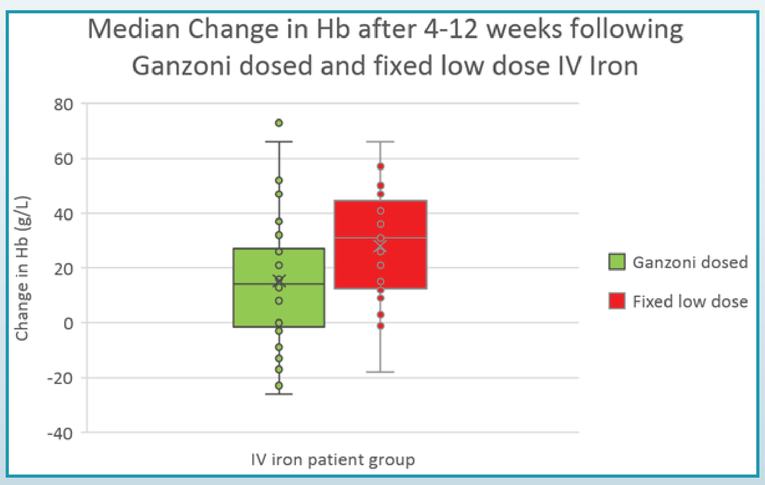


Figure 2



Discussion

The results of this study show that Ganzoni dosing does not lead to improvements when compared to fixed low dose or simplified dosing methods; although it should be noted that there is wide interindividual variability regardless of which dosing method is utilised.

Conclusion

Routine Ganzoni dosing of IV iron is unnecessary and a waste of pharmacist time. Low dose fixed dosing or simplified dosing are acceptable alternatives. Regardless of dose chosen, follow up Hb monitoring should be performed in all patients due to large interindividual variability in response.

References

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