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Iron management in a haemodialysis population post-PIVOTAL

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Background
IV iron plays a critical role in the management of anaemia in haemodialysis patients. The PIVOTAL trial recently generated new insights in this context, and suggested potential harm associated with under-treatment with IV iron.

Aim
To perform a prospective cross-sectional survey of iron management in a single-centre haemodialysis population in light of the results from the PIVOTAL trial.

Methods
During June 2019, we prospectively measured haemoglobin, serum ferritin and transferrin saturation in a prevalent haemodialysis population at a tertiary renal centre. The current dose of IV iron sucrose was also recorded. Extrapolating from the PIVOTAL trial results (best outcomes in the high-dose group with a mean ferritin of around 650 ng/ml and a TSAT of around 26%), we arbitrarily and conservatively defined under-treatment with iron as a ferritin level ≤500 ng/ml and a TSAT ≤25%.

Results
A total of 587 patients were identified, 581 of whom had a ferritin result available. Of these, 358 (62%) had a ferritin level ≤500 ng/ml and 295/527 (56%) had a TSAT ≤25%. For the 527 patients in whom both ferritin and TSAT measurements were available, 204/527 (39%) were defined as under-treated.
Of the 587 patients, 111/582 (19%) were not receiving IV iron. 71/582 (12%) were on 100 mg monthly, 48/582 (8%) were on 200 mg monthly, 339/582 (58%) were prescribed 400 mg iron sucrose/month and 14/582 (2%) were on ≥ 400 mg. The iron dose was not available in 5 patients.
Of the 204 undertreated population, 22 (11%) were not on IV iron. 17/204 (8%) were on 100 mg/month, 16/204 (8%) on 200 mg/month, 137/204 (61%) on 400 mg/month, and 11/204 (2%) on > 400 mg monthly.
Of the patients defined as undertreated, the haemoglobin ranged from 63 to 151 g/l with a mean of 109.8 g/l and a median of 111 g/l.
30 patients had a haemoglobin less than 100 g/l and 92 patients had a haemoglobin less than 110 g/l.
24/204 patients were not on an ESA (one patient was on Daprodustat) with a mean dose of 12,200 U/week.

Conclusion
Our current iron protocol is under-dosing a significant proportion of patients. This protocol requires review in light of the PIVOTAL study since it is likely significant cost savings could be achieved as a result of using lower doses of ESA therapy, along with the cardiovascular benefits seen in the higher dose arm of the trial.