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 undertreatment 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 undertreatment 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 undertreated.

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.