

Quality improvement project - Intravenous iron in Neck of Femur fracture patients

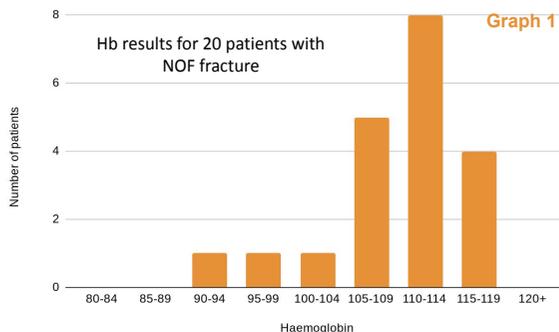
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Aim: To increase recognition and subsequently the treatment of iron deficiency anaemia (IDA) in peri-operative patients with neck of femur (NOF) fractures.

IDA is a common occurrence in our frail, elderly patients with multiple co-morbidities, including those in the peri-operative period. The consensus guideline (1) aims to produce best practice and evidence-based guidelines for IDA diagnosis and treatment in the peri-operative period. However we recognised that our management of anaemia in this group of patients was sub-optimal.

Step 1: Using the National Hip fracture database we audited 20 patient notes retrospectively. We accessed their electronic records which included their admission (Graph 1) & post-operative blood results, electronic medication charts (EPMA) records, discharge summaries and length of stay data. Inclusion criteria : aged 65 years or older, operative management of NOF fracture, admitted on orthopaedic or orthopaedic outlier ward.

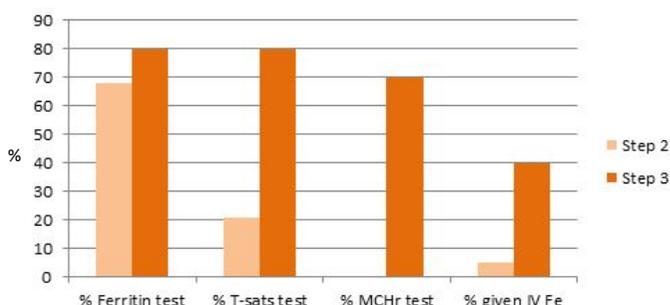
Step 2: We devised a flow chart guideline for anaemia investigation and treatment. Patients with an admission Hb of <120, to have haematinics/MCHr/t-sats added to their admission bloods by the doctors assistants (DAs). If the criteria for IDA/functional anaemia is met as per our guidelines, the aim would be to give IV iron (see supplementary data sheet for full guideline). This was circulated to the team and a further 20 patients notes reviewed after this. The limitations were as seen in Box 1. As a result only 1 patient received IV iron.



Box 1

- 1.No robust way of ensuring these blood tests were added on
- 2.MCHr could not be added on by the usual means of a paper request, therefore no patients had an MCHr requested.
- 3.Ferritin results often unreliable as done days after surgery.

Graph 2 - Testing and treatment improvements for patients presenting with pre-operative anaemia



Results: Our changes showed an improvement in the numbers of patients getting the bloods tests they needed to make decisions about IV iron (Graph 2) compared to at Step 2.

40% of those 20 patients received IV iron.

60% of patients had the potential to receive IV iron given the results. It is not clear why each individual patient didn't have iron but some had been given IV antibiotics or large number of RBC units for example.

Step 3: We made some changes to the guidelines:

1. Haematinics add on slip done on admission to the ward (pre-op)
2. MCHr and tsats to be done day 1 post-op. An order set "NOF anaemia" on our blood system which included these requests.

Day 1 post-op bloods are standard for all NOF# patients therefore it didn't increase the venepuncture burden. This reduced the need for a clinician having to ring the lab to add the MCHr and tsats to the admission bloods.

To increase the proportion of patients getting the correct blood tests we did some teaching with the DAs and formulated their own flow chart for reference (see supplementary data).

We reviewed a further 20 patient notes after these changes and the results are shown in Graph 2 and the results box.

Further work - To get this approved as a hospital guideline and make this standard care in the orthogeriatric department. Adapt to other departments needs. Teaching to orthopaedic team so they can utilise this without orthogeriatric input if needed.
References 1. Munoz et al. Management of postoperative anaemia after major surgical procedures. Anaesthesia 2019, 73, 1418 –1431
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