An Audit of Haemoglobin Assessment after Post-Operative Blood Transfusion in Patients with Hip Fracture.

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Background

Every day 4000 UK hospital beds are occupied by patients with hip fracture[1]. Many of these, often frail patients, require post-operative red blood cell transfusion, a procedure that carries risk, expense, and places demand on a scarce resource. Current transfusion practices vary considerably[3].

For all patients who are **not actively bleeding, without chronic transfusion requirements,** National Institute of Clinical Excellence (NICE) guidance[2] advocates:

- **Restrictive thresholds: Hb ≤70g/L** | or in Acute Coronary Syndrome **≤80g/L.**
- **Post transfusion targets: Hb 70-90g/L** | or in Acute Coronary Syndrome **80-100g/L.**
- **Single Unit Transfusions: Hb check & patient review after every unit** (as soon as 15mins after).

Aim

To investigate if post-transfusion haemoglobin levels were being checked in post-operative patients with hip fracture according to NICE guidance.

Methods

We accessed the UK National Hip Fracture Database to obtain our patient cohorts. We used the Hospital Transfusion Database (MOLIS) to obtain transfusion data including the time and date of transfusion, and the number of units given. We cross-checked this against time and date of operation and excluded all pre- & intra-operative transfusions. We excluded patients with active bleeding or chronic requirements for blood.

SUNQUEST ICE was searched to investigate pre- and post-transfusion haemoglobin levels. Serial Troponin-I rise and case notes were used to identify patients with ACS. The data was interrogated for the number of units received by the patient, and for Hb assessment after each unit transfused. NICE post-transfusion targets were used to assess for over-transfusion.

Intervention

Education

We disseminated our work at the **Orthopaedic audit meeting** and hospital **Grand Round**. We **delivered lectures** to the new cohort of foundation doctors & updated the **hospital transfusion teaching** for nursing staff. We also produced a piece in the newsletter.

Innovation

In order to **make the right way the easy way** we introduced **point-of-care haemoglobin testing** to the hip fracture ward. We incorporated training for this into the **junior doctor's induction** programme as well as providing **ward based training** for the **nursing staff**.

Audit 1

15 Months: Nov 2014 - Jan 2016.
337 patients with hip fracture
25% Transfused
198 Units of packed red cells

Results
Hb Check following
- 1 Unit: **13%**
- ≥ 2 Units: **86%**
- No check: **1%**

Implications
84% of patients over-transfused according to NICE recommended targets.

Audit 2

3 Months: Aug - Nov 2016
70 patients with hip fracture
21.4% Transfused
20 Units of packed red cells

Results
Hb Check following
- 1 Unit: **80%**
- ≥ 2 Units: **20%**
- No check: **0%**

Implications
- **7.4 units saved per month.**
- **£793 saved per month.**
- Proportion of **patients over-transfused reduced to 26%.**

Conclusions

- **Hb check after every unit** transfused is **essential** when considering the need for **further transfusion**.
- This audit identified a deficiency in this **NICE recommended practice**.
- **Education** and **point-of-care haemoglobin testing** can facilitate best practice.
- This **reduces demand** on blood, **saves money**, and **improves patient safety.**
- **Further work** is needed to achieve full compliance with NICE guidance.

References

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