

# PREOPERATIVE INTRAVENOUS IRON TO TREAT ANAEMIA BEFORE MAJOR ORTHOPEDIC SURGERY

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## Background and Importance

Preoperative anaemia affects a high proportion of patients undergoing major orthopedic surgery and is associated with poor clinical outcomes.

The scheduling of a preoperative visit with sufficient notice (at least 2-3 weeks before surgery), enables us to treat the anaemia and/or improve preoperative hemoglobin levels.

**Intravenous iron with or without erythropoietin** are treatments for optimizing anaemia, with good levels of scientific evidence.



## Aim and Objectives

To evaluate the effectiveness of intravenous ferric carboxymaltose (FCM) administered preoperatively in patients undergoing elective orthopedic surgery.



## Materials and Methods

Retrospective Observational Study conducted between January and December 2021

### PATIENT BLOOD MANAGEMENT (PBM) STRATEGY :

Detect **preoperative anaemia (Hb < 13 g/dL)**, stimulation of erythropoiesis, correct haemostasis, improve patient's conditions



Decide type of surgery, operation date, order preoperative assessment test (at least **30 days** before surgery)

Preoperative assesment visit **7-14 days** before elective surgery

### Endpoints included:

Age, sex, dose FCM administrated, type of surgery, time between administration and surgery, Hb levels just before surgery and adverse events



## Results

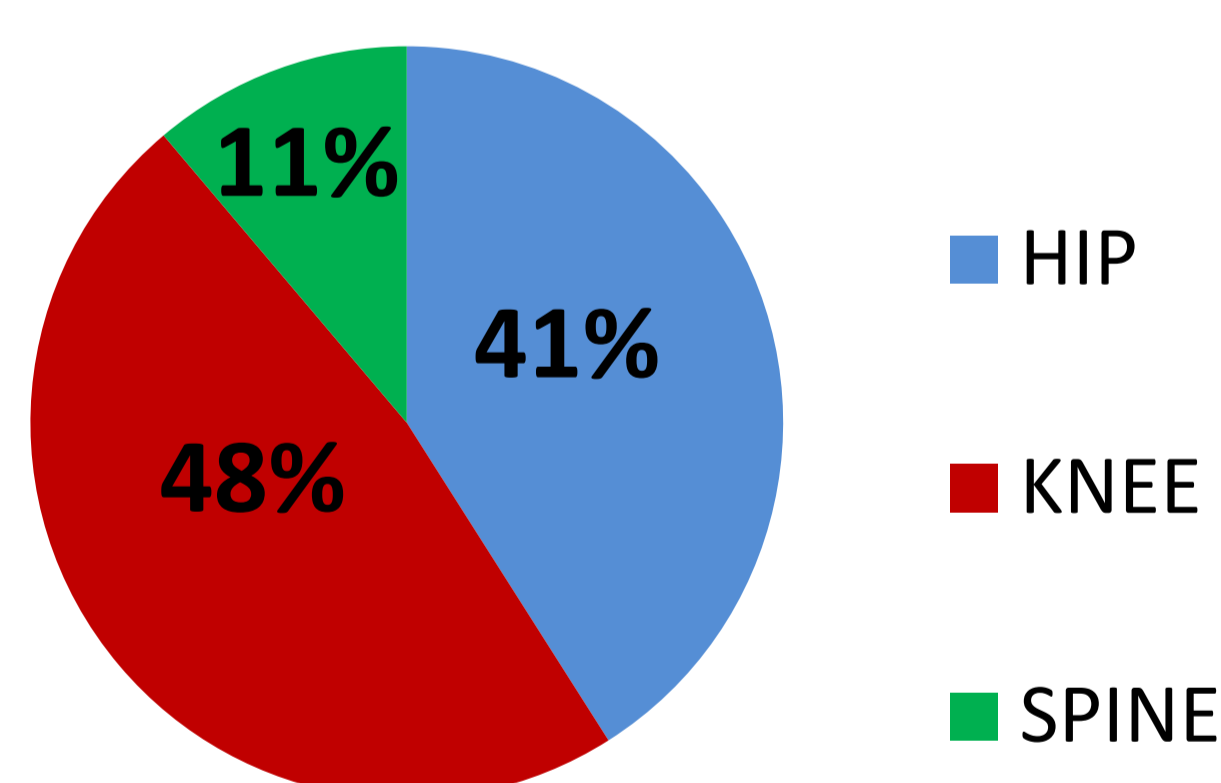
165 patients:

86,6 %



Average age: **71 years** (ICR: 65-80)

### TYPE OF ORTHOPEDIC SURGERY

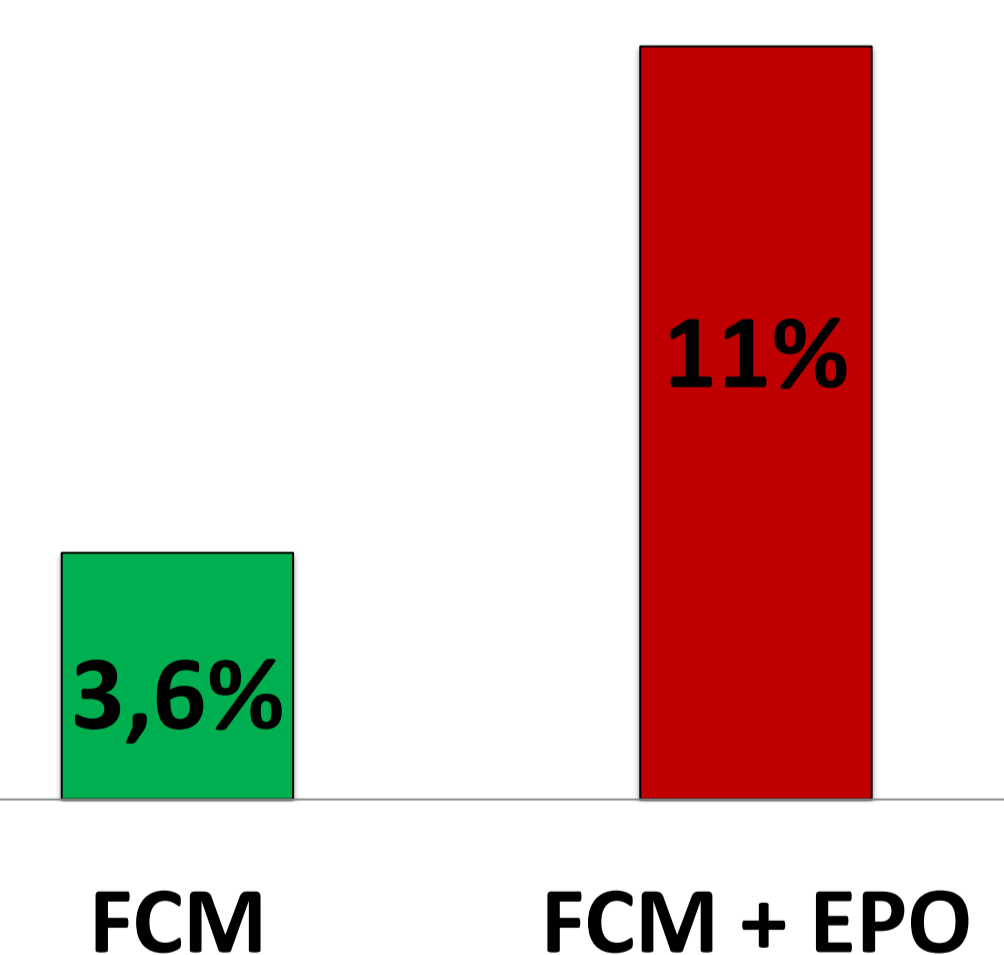


### FCM dose administered:

- 500 mg: 44 (26,6%)
- 1000 mg: 121 (73,3%)

➤ 79 patients (**48%**) between **7-14 days** before surgery

Total patients with **Hb > 13 g/dL** just before surgery : **7,3 %**



**No severe adverse events** or signs of hypersensitivity related to intravenous FCM therapy were observed (monitored during and for at least 30 min after administration).

**Limitations:** no evidence with respect to outcomes such as quality of life, postoperative complications, morbidity and mortality.



## Conclusion and Relevance

- ✓ The effectiveness of intravenous FCM to optimize Hb before surgery was moderate, adjuvant administration of rHuEPO improved the results.
- ✓ It may be useful to investigate possible predictive factors that may impact intravenous FCM treatment success.
- ✓ The study suggest that current preoperative intravenous iron protocol should be revised to ensure proper use and optimisation of preoperative Hb levels.
- ✓ Additional high quality studies are needed to determine definitively the clinical effectiveness of intravenous FCM.

### References

1. Muñoz M, Acheson AG, Averbach M et al. International consensus statement on the peri-operative management of anaemia and iron deficiency. Anaesthesia 2017; 72:233-247.
2. Canillas F, Gomez-Ramirez S, Garcia-Erce JA et al. Patient blood management en cirugía ortopédica. Rev Esp. Cir. Ortop. Traumatol 2015; 59 (3):137-149.
3. Gomez-Ramirez S, Maldonado-Ruiz MA, Campos-Garrigues A et al. Short-term perioperative iron in major orthopedic surgery: state of the art. Vox Sanguinis 2019; 114:3-16.

