



Title	The use of Epoetin Alfa Before Orthopedic Surgery in Patients with Mild Anemia
Agency	NHS QIS, NHS Quality Improvement Scotland Delta House, 50 West Nile Street, Glasgow G1 2NP, Scotland, United Kingdom Tel: +44 141 225 6999, Fax: +44 141 248 3778; comments@nhshealthquality.org, www.nhshealthquality.org
Reference	Craig et al. 2006. Health Technology Assessment Report 8. ISBN 1-84404-853-5

Aim

To determine whether or not epoetin alfa should be used in patients with mild anemia (Hb<10–13 g/dL) prior to major elective orthopedic surgery to reduce exposure to allogenic blood transfusion.

Conclusions and results

Meta-analysis demonstrated that the likelihood of transfusion was significantly lower for patients receiving epoetin alfa than for those receiving placebo ($p=0.007$). The patient group receiving epoetin alfa required significantly less blood than that receiving placebo ($p<0.0001$). One study reported the number of units of blood transfused per transfused patient. This showed that in patients who actually underwent a transfusion, epoetin alfa administration did not reduce the number of units of blood used. None of the studies reported significant differences in length of stay or postoperative infection rates as a result of using epoetin alfa. It is unclear to what extent the clinical effectiveness results can be generalized to Scotland as many of the studies were in settings with different transfusion policies.

The economic model combined the effectiveness data with drug costs, the savings from avoided viral infections, and adverse events and calculated a cost per QALY of over GBP 21 million. Furthermore, the model demonstrated that cost of transfusing a unit of blood would have to rise from the current GBP 230 to over GBP 2750 for the use of epoetin alfa as a blood sparing treatment to become cost effective. Hence, while epoetin alfa is effective in reducing the incidence of transfusion in this patient population, it is not cost effective.

Recommendations

In NHSScotland, administration of epoetin alfa to patients with mild anemia prior to major elective orthopedic surgery, to reduce exposure to allogenic blood transfusion, is not recommended. It should be consid-

ered only if the patient cannot receive a blood transfusion for religious reasons, or because suitable blood is unlikely to be available.

Methods

A literature search was undertaken to identify evidence pertaining to the clinical and cost effectiveness of epoetin alfa compared to standard care. Experts, patient interest groups, and the manufacturer also provided evidence. The evidence was critically appraised, and meta-analyses were performed. An economic model was constructed, and the results were tested with sensitivity analyses to ensure extreme changes in parameter values had no effect.

Further research/reviews required

It may be informative to update the analyses at a later date if, eg, the price of epoetin alfa decreases, the risks associated with transfusion increase, or the demand for blood exceeds the supply.