National Institute for Health and Clinical Excellence

**Erythropoetin (alpha and beta) and darbepoetin for the treatment of cancer-treatment induced anaemia**

Royal College of Nursing

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**Introduction**

With a membership of over 395,000 registered nurses, midwives, health visitors, nursing students, health care assistants and nurse cadets, the Royal College of Nursing (RCN) is the voice of nursing across the UK and the largest professional union of nursing staff in the world. The RCN promotes patient and nursing interests on a wide range of issues by working closely with Government, the UK parliaments and other national and European political institutions, trade unions, professional bodies and voluntary organisations.

**Response to the Appraisal Consultation Document on the use of Erythropoetin (alpha and beta) and darbepoetin for the treatment of cancer-treatment induced anaemia**

The Royal College of Nursing welcomes the opportunity to review the Appraisal Consultation Document of the technology appraisal of Erythropoetin (alpha and beta) and darbepoetin for the treatment of cancer-treatment induced anaemia.

We accept that the Committee has done a thorough job of critically appraising the evidence and pointing out that Cancer Treatment induced Anaemia is a multi-stranded problem. This is something that is often not taken into account or even investigated by Oncologists. For example, not many Cancer patients routinely have B12, Folate and Iron levels checked before and during treatment. In our view, it is not widely know that cancer - or any inflammation signified by a raised CRP - will give a falsely high Ferritin reading. This vital point highlights the issue that clinical management of cancer treatment induced anaemia is sub standard.

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The RCN is concerned that the Committee has not fully taken into account the level of impact anaemia has on a cancer patient’s quality of life. Anaemia is associated with fatigue and breathlessness which has been well documented in the medical literature. Fatigue is the most prevalent symptom of cancer patients, affecting 70-95% receiving chemo/RT. (NCCN 2003). FACT-F (Fatigue) and FACT-An (Anaemia) assessment tools widely used by oncology health professionals demonstrate a correlation between anaemia, fatigue and quality of life. Anaemia can also lead to delays and dose reduction, in chemotherapy treatment, therefore, impairing optimal treatment of patients with malignant disease. Treating anaemia improves quality of life patients and this is an important consideration when treating patients with malignant disease. It is vital that the side effects of treatment should not seriously impair quality of life of patients which may be limited. Current treatment of chemotherapy induced anaemia is with blood transfusion.

We would recommend that the Committee reconsiders its decision with respect to the use of EPOs for the treatment of cancer treatment induced anaemia in the light of the points raised below:

1. **COST EPO v BLOOD**

We consider that in reaching their decision, the Committee have not taken into consideration the costs of preparing for the blood transfusion, the nurses’ costs and the bed cost of about 25% of patients who have to be admitted for overnight stay due to their condition. Evidence suggests, as does clinical experience, that one third of cancer patients require a blood transfusion during chemotherapy (Littlewood et al 2001). Often these patients require repeated transfusions, 3-4 weekly, with the duration of the effects of transfusion being short-lived.

**Cost of blood**

We are aware that the latest cost of a 2 unit blood transfusion is £546.12 (Agrawal et al, 2006). This includes the blood tests, preparation of the transfusion and the nurses’
time, but excludes the cost of an overnight stay that 25% of patients require. In our view, the Committee did not take these into consideration in this appraisal.

Further, there are many problems associated with blood transfusion. These include:

- a risk of incompatible transfusion due to identification errors;
- repeated blood transfusion may lead to antibody production and subsequent transfusion reactions;
- infections - in the recent past hepatitis C and HIV infections have been caused by blood transfusion. Although these are now screened for, but it is entirely possible that unknown infections are being or will be transmitted in the future;
- CJD is another potential problem related to blood transfusion;
- Effectiveness of patient’s own blood cells - because of the 120 day life span of red cells even fresh transfusion is less effective than the production of the patient’s own red cells;
- Shortfall in the number of blood donors - it is important to note that 50% of transfusions are for cancer patients, with the increasing ageing population there will be an increased requirement for blood, leading to shortfall
- The expectation that Trust Hospital Transfusion Committee are expected to reduce the use of blood products due to the forecast shortage and therefore have to consider use of alternatives.

Cost of EPO- (British National Formulary Prices (BNF))

The Appraisal Committee has not used the NHS, HRG prices in calculating the cost of EPO and appears to have ignored NHS discount prices, which are often negotiated.

For instance, if one were to calculate the cost of treating a 60kg patient using the BNF53 March (2007), for any of the three different types of EPO, the following outcome has been derived:

- Darbepoetin alfa (Aranesp)one s/c injection every 3 weeks £779.25 (£259 a week)
- Epoetin alfa (Eprex) s/c injection 3 x a week £237 a week
- Epoetin beta (NeoRecormon) weekly initial dose cost approx £233.81 a week

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This is cheaper than the cost indicated in the report. It is worth noting that these are not discounted NHS prices, which would be remarkably lower.

In addition to the lower cost of EPO to that of blood transfusion, EPO also offers more advantages to patients, in that the Hb level remains sustained in the 65-75% of patients who respond. For the 25-35% patients who do not respond, recent evidence suggests that IV iron may be of benefit when given with EPO. The side effects are minimal and hypertension and red cell aplasia is rare.

A further advantage of EPO treatment is that it improves the quality of life for fatigued patients and removes the need for patients to travel to hospital for repeated transfusion. Such journeys are exhausting and interfere with precious time at home and stop patients getting back to work. This can lead to financial problems, causing them even more anxiety.

2. ETHICAL ISSUES

There are also some ethical issues that should be taken into consideration for this technology appraisal. We welcome the fact that patients of the Jehovah witness faith group will be given EPO based on their religious beliefs. We, however, consider that EPO should be available to patients from other faith groups who prefer it to blood transfusion; otherwise it could be considered as being discriminatory.

Further EPO is available for patients in the private sector who are often treated by the same clinicians as the NHS patients.

Clinicians know that this treatment is effective and yet they are expected to deny patients the treatment. This often leaves clinicians in an ethical dilemma and with some feeling that they may be failing in their duty to provide the best treatment for their patients.

3. PATIENT CHOICE

The Committee appears to have ignored patient choice. Patients are expected to travel to the hospital for repeated transfusion causing them the following problems:-
• taking them away from their family when they are experiencing difficulties and poor quality of life
• inability to get back to work as duration of effects of transfusion is often short-lived. This leads to financial problems.

4. DETRIMENTAL TO TREATMENT OUTCOMES

Failure to use EPO may be detrimental for those patients receiving platinum chemotherapy (i.e. ovarian and lung cancer patients) as they are more susceptible to anaemia, due to repeated courses of chemotherapy. Their remission is usually short lived, but their disease is often controlled on repeated courses of treatment. Anaemia in cancer patients can lead to delays in chemotherapy and dose reduction, meaning that optimal treatment is not given.

It is not just the financial cost that needs to be considered but the impact on survival outcomes that a maintained haemoglobin level can have. If the level of haemoglobin is maintained patients’ tolerance to treatment is likely to improve. Thus, patients will not need to consider having a sub-therapeutic number of courses of chemotherapy treatment or have dose modification of treatment as a result of chemotherapy induced anaemia which will improve outcome.

5. CONCLUSION

Chemotherapy is an expensive but effective form of treatment and often causes unwelcome side effects. We believe that if there are drugs available to help patients endure these side effects, they should be made available.

Clinical decisions should be evidence based. The medical and nursing professions have embraced this concept, for the benefit of our patients. We have seen that intervention with EPO can improve patient’s quality of life whilst they are receiving chemotherapy for the treatment of cancer.

We would urge the Committee to reconsider their recommendations in the light of the concerns we have raised and in the interest of patients.
REFERENCES

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