

Costing statement: epoetin alfa, epoetin beta and darbepoetin alfa for cancer treatment-induced anaemia

The guidance on epoetin alfa, epoetin beta and darbepoetin alfa for cancer treatment-induced anaemia (NICE technology appraisal guidance 142) is unlikely to result in a significant change in resource use in the NHS.

The guidance states that epoetin alfa, epoetin beta and darbepoetin alfa (erythropoietin analogues) should be used only in limited circumstances. They are not recommended for routine use in the management of cancer treatment-induced anaemia, but may be considered in combination with intravenous iron:

- for the management of cancer treatment-induced anaemia in women receiving platinum-based chemotherapy for ovarian cancer who have symptomatic anaemia and a haemoglobin level of 8 g/100 ml or lower
- for people who cannot be given blood transfusions and who have profound cancer treatment-related anaemia that is likely to have an impact on survival.

The erythropoietin analogue with the lowest acquisition cost should be used.

Patient numbers affected

The number of people affected by the guidance will be small. There are approximately 5400 new cases of ovarian cancer in England each year¹. Of these, approximately 50%² (2700) undergo chemotherapy, which is usually

¹ 'Cancer registration statistics 2005'. Available from: www.statistics.gov.uk

² This is the average proportion receiving chemotherapy within 1 year of diagnosis from six cancer information services, with a range of 33–53%. Estimates of the proportion of women receiving chemotherapy within 1 year of diagnosis vary, and range from 33% to 75%.

platinum based. Approximately 8%³ of these (220) have anaemia associated with a haemoglobin level of 8 g/100 ml or lower. The number of people with profound cancer treatment-related anaemia that is likely to have an impact on survival and who cannot be given blood transfusions is unknown, but is not likely to be large. Hence the number of people in England eligible to receive erythropoietin analogues is unlikely to be more than 250 per year.

Resource impact

The guidance states that when erythropoietin analogues are recommended, the analogue with the lowest acquisition cost should be used. The estimated cost per person is shown in table 1. The cost per vial is the manufacturer's list price, but local organisations may be able to obtain erythropoietin analogues at less than list price and so reduce the cost of implementation.

Table 1 Cost of erythropoietin analogues

	Epoetin alfa	Epoetin beta	Darbepoetin alfa
Dose	150 units per kg	150 units per kg	2.25 micrograms per kg
Average dose (assuming average weight of 70 kg)	10,000 units	10,000 units	150 micrograms
Cost per vial	£62.85 (10,000-unit vial)	£77.93 (10,000-unit vial)	£155.85 (100-microgram vial)
Cost per dose	£62.85	£77.93	£233.78
Number of doses per week	3	3	1
Cost per week	£188.55	£233.79	£233.78
Average number of weeks of treatment	18	18	18
Expected cost per person	£3394	£4208	£4208

Because erythropoietin analogues are not recommended for routine use within the NHS we do not anticipate there being a significant impact on resources. The maximum cost of treating people who are eligible is likely to be less than £900,000 per year if the lowest cost analogue is used.

³ From Groopman JE, Itri LM (1999) Chemotherapy-induced anemia in adults: incidence and treatment. *Journal of the National Cancer Institute* 91: 1616–34.

Current use of erythropoietin analogues varies across cancer services. If erythropoietin analogues are currently used in groups other than those recommended by NICE in this appraisal, there may be a consequent cost-saving to local cancer services.