NICE National Institute for Health and Care Excellence

Putting NICE guidance into practice

Costing report: Implementing the NICE guidance on alemtuzumab for treating relapsing–remitting multiple sclerosis (TA312)

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1 Introduction

1.1 Technology appraisals cover the use of new and existing medicines and treatments within the NHS in England. Unless otherwise directed by the Department of Health, NHS bodies should make funding available for treatments recommended by NICE within 3 months of publication of the guidance.

1.2 This report and accompanying costing template aims to help organisations in England plan for the financial implications of implementing the NICE guidance. Commissioners are clinical commissioning groups and providers are secondary care providers.

1.3 The costing template can be used to estimate both the local and cost implications of implementing the guidance. Local cost implications can be calculated by varying the assumptions and by feeding in data that reflect local circumstances. The costing report illustrates the national, broader implications for the NHS. It is derived from the same model, but using national data.

2 Guidance

2.1 The guidance states:

- Alemtuzumab is recommended as an option, within its marketing authorisation, for treating adults with active relapsing–remitting multiple sclerosis.

3 Background

3.1 Alemtuzumab has a UK marketing authorisation for treating adults with relapsing–remitting multiple sclerosis with active disease defined by clinical or imaging features.

3.2 The price used in the costing template has been agreed by the Department of Health and the manufacturer of alemtuzumab.

3.3 Alemtuzumab is a further treatment option for patients with multiple sclerosis. Alternative treatment options include teriflunomide, fingolimod, natalizumab, beta interferons and glatiramer acetate.

3.4 The manufacturers of teriflunomide and fingolimod have agreed patient access schemes with the Department of Health. They are simple discount schemes, with the discount applied at the point of purchase or invoice. The size of the discount is commercial in confidence. These treatments are included in this report and the costing template at list price. It is possible to adjust the costs in the template to reflect local circumstances.

4 Assumptions made

4.1 The costing model makes the following assumptions:

- the prevalence of multiple sclerosis is 0.16%
- the incident population starting treatment is 0.003%
- the percentage of people with multiple sclerosis who have relapsing–remitting multiple sclerosis is 35.5%
- the percentage of people who have relapsing–remitting multiple sclerosis who are eligible for drug treatment is 38.75%
- the percentage of people with highly active disease is 53% and with non-highly active disease is 47%
- the percentage of treatment-naïve people with rapidly evolving severe multiple sclerosis is 22%
- the percentage of treatment-naïve people without rapidly evolving severe multiple sclerosis is 78%
- the incident population or people being newly prescribed alemtuzumab is estimated to be 13% of the eligible population after 5 years which is assumed to be the steady state
- over the first 5 years of implementation it's estimated the percentage of the people switching to alemtuzumab from

prevalent population is set out in table 1 below, which is assumed to be the steady state.

Table 1 Uptake of alemtuzumab in prevalent population

	Year 1 %	Year 2 %	Year 3 %	Year 4 %	Year 5 %
In -year	3	3	8	5	5
cumulative	3	6	14	19	24

5 Costing summary

5.1 Table 2 sets out the cost of implementation for a population of 100,000 in England, using the NICE assumptions set out in section 4.

Table 2 Cost of implementation for a population of 100,000 using NICE assumptions

Cost	Year 1 costs £000s	Year 2 costs £000s	Year 3 costs £000s	Year 4 costs £000s	Year 5 costs £000s	Total costs £000s
People switching to alemtuzumab	23.4	37.5	78.7	81.2	73.2	293.9
Offsetting savings of current treatments	7.1	14.2	33.2	45.1	56.9	156.5
Net impact of People switching to alemtuzumab	**16.2**	**23.3**	**45.5**	**36.1**	**16.2**	**137.4**
People being newly prescribed alemtuzumab	5.7	11.5	15.7	20.2	24.8	78.0
Offsetting savings of current treatments	1.6	2.2	2.8	3.5	4.1	14.2
Net impact of people being newly prescribed alemtuzumab	**4.2**	**9.3**	**12.9**	**16.7**	**20.8**	**63.8**
Overall cost of alemtuzumab	**20.4**	**32.6**	**58.4**	**52.9**	**37.0**	**201.2**

5.2 For the prevalent population the cost of people switching to alemtuzumab per 100,000 population is estimated to be £137,400 over 5 years.

5.3 Based on the assumptions stated above, the annual cost impact associated with implementing the recommendations on alemtuzumab for people being newly prescribed alemtuzumab per 100,000 population is estimated to be £20,800 from year 5 onwards, when the uptake level has reached the level assumed in the cost model.

5.4 The total cost for this technology for a population of 100,000 over 5 years is estimated to be around £200,000.

6 Other considerations

6.1 Two of the comparators (teriflunomide and fingolimod) are available with a patient access scheme discount; this discount has not been included in the costing template because the size of the discount is commercial in confidence. The cost impact of alemtuzumab in this report and associated template will increase when these discounts are applied.

6.2 Although alemtuzumab is associated with significant benefits, it can cause serious side effects. However, according to clinical specialists these are manageable. It is important that the monitoring regimen is adhered to and clinicians might not offer alemtuzumab as a treatment if it is unlikely that the monitoring regimen would be complied with. Regular monitoring is needed for at least 4 years after the final treatment.

6.3 There is some uncertainty about the effectiveness of alemtuzumab in the long term, and specifically for periods longer than the duration of the follow up studies to the clinical trials. Some people

might not have a long-term effect from alemtuzumab and might need other treatments.

6.4 The assumptions made in the costing model are considered to be conservative. The sensitivity analysis is therefore used to vary the standard assumptions in the model.

7 Sensitivity analysis

7.1 The full sensitivity analysis can be found in appendix B of this report. The variables to which the model is most sensitive are:

- prevalence of multiple sclerosis
- number of people eligible for disease-modifying treatment
- uptake of alemtuzumab.

7.2 There is currently no accurate record of the number of people in England who have multiple sclerosis. The prevalence used is in line with the manufacturer's submission and is based on the estimate prepared by the Multiple Sclerosis Trust.

7.3 There is currently no accurate record of the number of people in England who are eligible for disease-modifying treatment for multiple sclerosis. In order to be consistent with previous NICE guidance the same estimates are used in this costing report.

7.4 Alemtuzumab has a significantly different administration regimen to other disease-modifying treatments that are available. It is expected to be preferable to current treatments for some people, but the rate of uptake is unknown.

8 Benefits

8.1 The following benefits are anticipated:

- Compared with most available treatments, alemtuzumab has a shorter time during which it is not recommended that a person

gets pregnant. This could be an advantage for people who are planning to have a baby.

- Some people may prefer the annual administration schedule of alemtuzumab to the daily or weekly administration schedule of other disease-modifying treatments.

9 Impact of guidance for commissioners

9.1 Alemtuzumab for treating active relapsing–remitting multiple sclerosis falls within the programme budgeting category 07X (neurological – multiple sclerosis). The commissioners are clinical commissioning groups and the providers are secondary care providers.

10 Conclusion

10.1 Based on the standard assumptions in the costing model the annual recurrent cost associated with implementing the recommendations on alemtuzumab for treating adults with active relapsing–remitting multiple sclerosis is as follows:

- The annual cost impact associated with implementing the recommendations on alemtuzumab for people being newly prescribed alemtuzumab per 100,000 population is estimated to be £20,800 from year 5 onwards, when the uptake level has reached the level assumed in the cost model.
- For the prevalent population the cost of people switching to alemtuzumab per 100,000 population is estimated to be £137,400 over 5 years.

Appendix A: Sensitivity analysis

Table 3 shows the sensitivity of the total cost of implementation to changes in each variable individually (if there are 2 variables that make up 100% between them they have been varied together to ensure the model remains realistic).

The sensitivity ratio allows a comparison of the variables by analysing the percentage changes in the variables and outturn. The closer the ratio is to 1, the more sensitive the overall cost is to fluctuations in the variable.

Table 3 Sensitivity analysis for a population of 100,000

				Recurrent costs				
	Baseline value	**Minimum value**	**Maximum value**	**Baseline costs (£000s)**	**Minimum costs (£000s)**	**Maximum costs (£000s)**	**Change (£000s)**	**Sensitivity ratio**
Prevalence of multiple sclerosis	0.16%	0.15%	0.17%	37.0	35.4	38.6	3	0.68
Proportion of people eligible for disease-modifying treatment	38.75%	33.75%	43.75%	37.0	32.3	41.7	9	0.98
Uptake of alemtuzumab	24.00%	14.00%	34.00%	37.0	21.7	52.3	31	0.99

About this costing report

This costing report accompanies NICE's technology appraisal guidance on: Alemtuzumab for treating relapsing–remitting multiple sclerosis (NICE technology appraisal guidance 312).

Issue date: May 2014

This report is written in the following context

This report represents NICE's view, which was arrived at after careful consideration of the available data and by consulting professionals. It should be read in conjunction with our guideline. The report is an implementation tool and focuses on those areas that were considered to have a potential impact on resources.

The cost and activity assessments in the report are estimates based on a number of assumptions. They provide an indication of the potential impact of the principal recommendations and are not absolute figures.

Implementation of this guideline is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guideline, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

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