NICE National Institute for Health and Care Excellence

Resource impact summary report

Resource impact
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This summary report is based on the NICE assumptions used in the resource impact template. Users can amend the 'Inputs and eligible population' and 'Unit costs' worksheets in the template to reflect local data and assumptions.

Recommendation

NICE has recommended pembrolizumab within its marketing authorisation, as an option for neoadjuvant treatment with platinum-based chemotherapy, then continued alone as adjuvant treatment, for resectable non-small-cell lung cancer (NSCLC) with a high risk of recurrence in adults. Pembrolizumab is only recommended if the company provides it according to the commercial arrangement.

Eligible population for pembrolizumab

Table 1 shows the population who are eligible for pembrolizumab and the number of people who are expected to have pembrolizumab in each of the next 5 years, including population growth.

Table 1 Population expected to be eligible for and have pembrolizumab in England

Eligible population and uptake	Current practice	2024-25	2025-26	2026-27	2027-28	2028-29
People eligible for pembrolizumab	2,200	2,300	2,300	2,300	2,300	2,400
Uptake for pembrolizumab (%)	0	20	30	35	45	50
Neoadjuvant setting						
People receiving treatment each year	0	500	700	800	1,100	1,200
Of whom: People suitable for treatment in adjuvant setting						
People receiving adjuvant pembrolizumab	0	300	500	600	700	800

The following assumptions have been used to calculate the eligible population:

- Proportion suitable for neoadjuvant treatment = 75%
- Proportion suitable for adjuvant treatment following surgery and neoadjuvant treatment = 71.2% (89.2% [Wakelee et al. 2023] minus 18% from trial data, who drop out or experience adverse effects)

The uptake for pembrolizumab is a mid-point based on clinical oncologist expert opinion from the resource impact for NICE's technology appraisal guidance on nivolumab with chemotherapy for neoadjuvant treatment of resectable non-small-cell lung cancer and the company estimate.

Treatment options for the eligible population

The comparator treatments for the eligible population are:

- Neoadjuvant setting: nivolumab plus chemotherapy; chemotherapy
- Adjuvant setting: active monitoring after surgery (no comparator treatment).

For simplicity, it is estimated that adjuvant treatment commences in month 7 and so half of the adjuvant treatment falls in the first year and half in the second year.

This is based on clinical information from NHSE that assumes adjuvant treatment commences 24 weeks after the start of neoadjuvant treatment.

Atezolizumab is not considered a comparator in this setting. Committee experts agreed the decision for people who were eligible for a neoadjuvant treatment (which meant they could have perioperative pembrolizumab or neoadjuvant nivolumab) followed by surgery and then adjuvant pembrolizumab or chemotherapy, would be separate from the decision for people who went straight to surgery for a number of reasons (not wanting to delay to avoid progression, insufficient information on histology or biomarkers to have a neoadjuvant treatment, or the cancer being at too low a stage to be eligible for neoadjuvant treatment). For those people, the decision would then be to have adjuvant chemotherapy and (if eligible) atezolizumab afterwards.

Pembrolizumab and comparator treatments are delivered by intravenous (IV) infusions.

For more information about the treatments, such as dose and average treatment duration, see the resource impact template.

The company has a commercial arrangement. This makes pembrolizumab available to the NHS with a discount.

Users can input the confidential price of pembrolizumab and amend other variables in the resource impact template.

The payment mechanism for the technology is determined by the responsible commissioner and depends on the technology being classified as high cost.

For further analysis or to calculate the financial impact of cash items, see the resource impact template.

Capacity impact

Clinical pathways for treatment of patients in the neoadjuvant and adjuvant setting are established in practice. There will be additional treatment cycles in the neoadjuvant and adjuvant setting with pembrolizumab compared to current practice, this will need to be assessed locally.

No new indication-specific adverse events of special interest (AEOSI) were identified (therefore, immune-mediated events causally associated with pembrolizumab) when pembrolizumab was administered concurrently with neoadjuvant chemotherapy and followed by adjuvant pembrolizumab monotherapy (table 36 company document B). The types of AEOSI observed in the pembrolizumab arm were generally consistent with the known safety profile of pembrolizumab monotherapy.

For further analysis or to calculate the financial capacity impact from a commissioner (national) and provider (local) perspective, see the resource impact template.

Key information

Table 4 Key information

Time from publication to routine commissioning funding	90 days
Programme budgeting category	2D Cancers & Tumours - Lung
Commissioner(s)	NHS England

Provider(s)	NHS hospital trusts
Pathway position	Pre-operative (neoadjuvant) resectable NSCLC and adjuvant (post operative) NSCLC

About this resource impact summary report

This resource impact summary report accompanies the NICE technology appraisal guidance on pembrolizumab with chemotherapy before surgery (neoadjuvant) then alone after surgery (adjuvant) for treating resectable non-small-cell lung cancer and should be read in conjunction with it.

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