NICE National Institute for Health and Care Excellence

Putting NICE guidance into practice

Resource impact report:
Atezolizumab in combination for treating metastatic non-squamous non-small-cell lung cancer (TA584)

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Summary

NICE has recommended atezolizumab plus bevacizumab, carboplatin and paclitaxel as an option for treating adults with metastatic non-squamous non-small-cell lung cancer (NSCLC), subject to certain criteria (see paragraph 1.1).

We estimate that:

- 4,020 people with untreated metastatic non-squamous NSCLC are eligible for treatment with atezolizumab in combination with bevacizumab, carboplatin and paclitaxel
- in this population 300 people will have atezolizumab from year 2 onwards once uptake has reached 7.5%, with most people in this population receiving pembrolizumab
- 350 people with previously treated (with targeted therapy) metastatic non-squamous NSCLC who have EGFR or ALK-positive tumours are eligible for treatment with atezolizumab in combination with bevacizumab, carboplatin and paclitaxel
- in this population 150 people will have atezolizumab from year 2 onwards once uptake has reached 42.5%, with most people in this population receiving pemetrexed plus carboplatin
- in total, 450 people will have atezolizumab in combination from year 2020/21 onwards once peak estimated uptake has been reached as shown in table 1.

Table 1 Estimated number of people in England having atezolizumab in combination with bevacizumab, carboplatin and paclitaxel

	2019/20	2020/21	2021/22	2022/23	2023/24
Population with untreated metastatic non squamous NSCLC	140	300	300	300	300
Population with previously treated EGFR/ALK positive non-squamous NSCLC	95	150	150	150	150
Total	**235**	**450**	**450**	**450**	**450**

This report is supported by a local resource impact template because the list price of atezolizumab, bevacizumab and some comparator treatments have discounts that are commercial in confidence.

This technology is commissioned by NHS England. Providers are NHS hospital trusts.

1 Atezolizumab in combination for treating metastatic non-squamous non-small-cell lung cancer

1.1 Atezolizumab plus bevacizumab, carboplatin and paclitaxel is recommended as an option for metastatic non-squamous non-small-cell lung cancer (NSCLC) in adults:

- who have not had treatment for their metastatic NSCLC before and whose PD-L1 tumour proportion score is between 0% and 49% or
- when targeted therapy for epidermal growth factor receptor (EGFR)- positive or anaplastic lymphoma kinase (ALK)-positive NSCLC has failed.

It is recommended only if:

- atezolizumab and bevacizumab are stopped at 2 years of uninterrupted treatment, or earlier in the case of loss of clinical benefit (for atezolizumab) or if the disease progresses (for bevacizumab), and
- the company provides atezolizumab and bevacizumab according to the commercial arrangements.

1.2 It is anticipated that for people who have untreated metastatic NSCLC and PD-L1 low or negative tumours, the main application of atezolizumab and combination treatments would be in people who have liver metastases.

2 Resource impact of the guidance

2.1 We estimate that:

- 4,020 people with untreated metastatic non-squamous NSCLC are eligible for treatment atezolizumab in combination with bevacizumab, carboplatin and paclitaxel

- The commissioner and the company anticipate uptake to be between 5% and 10% (mid-point of 7.5% used, equivalent to 300 people) with most people in this population receiving pembrolizumab
- 350 people with previously treated (with targeted therapy) metastatic non-squamous NSCLC who have EGFR or ALK-positive tumours are eligible for treatment with atezolizumab in combination with bevacizumab, carboplatin and paclitaxel
- The commissioner and the company anticipate uptake to be 42.5% (equivalent to 150 people), with most people in this population receiving pemetrexed plus carboplatin
- 450 people will have atezolizumab in combination with bevacizumab, carboplatin and paclitaxel from year 2020/21 onwards once peak estimated uptake has been reached as shown in table 2.

2.2 The current treatment and future uptake figure assumptions are based on clinical expert opinion and are shown in the resource impact template. It is estimated that uptake will reach 7.5% in people with untreated metastatic non-squamous NSCLC and 42.5% in people with previously treated metastatic non-squamous NSCLC who have EGFR or ALK-positive tumours. Table 2 shows the number of people in England who are estimated to have atezolizumab in combination with bevacizumab, carboplatin and paclitaxel by financial year.

Table 2 Estimated number of people having atezolizumab in combination with bevacizumab, carboplatin and paclitaxel using NICE assumptions

	2019/20	2020/21	2021/22	2022/23	2023/24
Population with untreated metastatic non squamous NSCLC	140	300	300	300	300
Population with previously treated EGFR/ALK positive non-squamous NSCLC	95	150	150	150	150
Total	**235**	**450**	**450**	**450**	**450**

2.1 This report is supported by a local resource impact template. Atezolizumab and bevacizumab have a commercial arrangement (simple discount patient access scheme). This makes atezolizumab and bevacizumab available to the NHS with a discount. The size of the discount is commercial-in-confidence. The discounted prices of atezolizumab and bevacizumab can be put into the template and other variables may be amended. It is the company's responsibility to let relevant organisations know details of the discount.

Savings and benefits

2.2 The Cancer Drugs Fund (CDF) clinical lead and clinical experts confirmed that people who are well enough to have further lines of therapy would be likely to have docetaxel after the atezolizumab combination. This would allow for disinvestment in more expensive options at this point in the treatment pathway. This has been included in the resource impact template.

2.3 There are patient access schemes in place for further lines of therapy. The resource impact template allows users to estimate savings by entering the relevant prices.

3 Implications for commissioners

3.1 This technology is commissioned by NHS England. Providers are NHS hospital trusts.

3.2 For people who have previously received a targeted therapy and who have either EGFR or ALK positive tumours, the Medicines and Healthcare products Regulatory Agency has granted atezolizumab plus bevacizumab, carboplatin and paclitaxel early access to medicines scheme status for this indication.

3.3 Because atezolizumab plus bevacizumab, carboplatin and paclitaxel has been available through the early access to medicines scheme for people who have EGFR or ALK-positive NSCLC, NHS England and commissioning groups have agreed to provide funding to implement this guidance 30 days after publication for this group. Therefore, implementation is assumed to start in July 2019 for people who have EGFR or ALK-positive NSCLC and in September 2019 for people with untreated metastatic non-squamous NSCLC.

3.4 Atezolizumab combination falls within the programme budgeting category 2D: Cancers and Tumours - Lung.

4 How we estimated the resource impact

The population

4.1 Around 38,400 people were diagnosed with lung cancer in 2016 (Office for National Statistics 2018). Table 3 shows the details of the population with untreated NSCLC and previously treated EGFR or ALK-positive non-small-cell lung cancer who are estimated to be eligible for treatment with atezolizumab combination.

Table 3 Number of people eligible for treatment in England

Population	Reference	(%)	Untreated NSCLC	EGFR / ALK NSCLC
Adult population			43,752,473	43,752,473
Incidence of lung cancer[1]	(a)	0.09	38,400	38,400
People presenting with non-small-cell lung cancer[2] – (a x b)	(b)	88.5	34,000	34,000
People whose cancer has non-squamous histology[3] (b x c)	(c)	68	23,100	23,100
People who are diagnosed at stage IV (metastatic) – [4] (c x d)	(d)	52	12,000	12,000
People diagnosed at stages I-IIIA who progress to stage IIIB-IV as a percentage of those who have non-squamous NSCLC [5] (c x e)	(e)	20	4,600	4,600
Sub-total (d + e) people who have stage IIIB – IV metastatic NSCLC	(f)		16,600	16,600
People who have EGFR or ALK positive tumours[6] (f x g)	(g)	11		1,800
People who have untreated NSCLC [6] (f x h)	(h)	89	14,800	
People who have less than 50% PD-L1 tumour proportion score (TPS) [7] (h x i)	(i)	19.4	2,900	
People who are PD-L1 negative –[8] (h x j)	(j)	66.3	9,800	
Sub-total (i + j) people who are PD-l1 negative	(k)		12,700	
Eligible population who are untreated and whose performance status is 0 - 1[9] (k x l)	(l)	**31.6**	**4020**	
People who may be eligible for subsequent treatment (EGFR/ALK positive)[10] (g x m)	(m)	26.4		480
People with ALK positive tumours[11] (m x n)	(n)	**25**		**120**
People with EGFR positive tumours[11] (m x o)	(o)	75		360
People who do not have T790M mutation[12] (o x p)	(p)	**55**		**200**
People who have T790M mutation and receive osimertinib (CDF)[12] (o x q)	(q)	45		160
People who have subsequent treatment after osimertinib [11](q x r)	(r)	**20**		**30**
Total number of people eligible for treatment with atezolizumab combination (l, (n+p+r))	(s)		**4020**	**350**
People estimated to have atezolizumab combination each year from year 2020/21(s x t)	(t)	7.5	300	
People estimated to have atezolizumab combination each year from year 2020/21(s x u)	(u)	42.5		150

Assumptions

4.2 The resource impact template assumes that:

Untreated NSCLC:

- People who have untreated non-squamous metastatic NSCLC who also have liver metastases would in future be treated with atezolizumab in combination with bevacizumab, carboplatin and paclitaxel through routine commissioning. This is estimated to be 7.5% of the eligible population (300 people).

ALK-positive

- It is estimated 44.6% of people currently have pemetrexed plus carboplatin
- In future practice 42.5% of people are estimated to receive atezolizumab in combination with bevacizumab, carboplatin and paclitaxel (50 people)

EGFR-positive:

- For people who are EGFR positive and do not have the T790M mutation, it is assumed these people currently receive pemetrexed and carboplatin (200 people)
- In future practice 42.5% of people are estimated to receive atezolizumab in combination with bevacizumab, carboplatin and paclitaxel (100 people) and 100 people are assumed to have pemetrexed and cisplatin. This includes people having subsequent treatment after osimertinib.

Potential savings in subsequent lines of therapy:

- 46.6% of people are assumed to be well enough after receiving atezolizumab combination to have a subsequent line of therapy.

- It is anticipated that people who receive atezolizumab in combination with bevacizumab, carboplatin and paclitaxel would receive docetaxel as a subsequent line of therapy if they are fit enough. This would mean future lines of immunotherapy drugs would not be commissioned resulting in cost savings. These can be calculated using the resource impact template.

5 References (Table 3)

1 Cancer registration statistics, England 2016/ C33-C34 Malignant neoplasm of trachea, bronchus and lung. Available from: ONS Cancer registration statistics England 2016

2 Royal College of Physicians (2018). UK National Lung Cancer Audit 2018. Available from: NLCA 2017 AnnualReport

3 Data from NHS England

4 Public Health England 2017. Cancer breakdown by stage 2017. Available from: National Cancer Intelligence Network

5 Company submission based on a weighted average using trial data for people whose cancer has progressed

6 Company market research data

7 Estimated based on companies data from: Dietel M, Savelov N et al (2018) 130O Real-world prevalence of PD-L1 expression in locally advanced or metastatic non-small cell lung cancer. The global multicentre EXPRESS study. Journal of Thoracic Oncology 2018. Available from: https://www.jto.org/article/S1556-0864(18)30404-0/abstract

8 Estimate using data from EXPRESS study (see reference 7) and budget impact analysis. This excludes people whosePD-l1 status is 50% or more because the evidence does not include pembrolizumab as a comparator.

9 Estimate using NHS England submission

10 Company budget impact submission.

11 Clinical lead opinion – NHS England.

12 Stocklet T (2018); Tseng et al (2016), Yu (2013); Pao (2005) (50-60% have T790M positivity, mid-point used - 55% of people have tumours with T790M mutation at progression). Per budget impact model assumption.

About this resource impact report

This resource impact report accompanies the NICE guidance on Atezolizumab in combination for treating metastatic non-squamous non-small-cell lung cancer and should be read with it.