NICE National Institute for Health and Care Excellence

Putting NICE guidance into practice

Resource impact report:
Ruxolitinib for treating polycythaemia vera (TA921)

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Summary

NICE has recommended ruxolitinib, within its marketing authorization, for treating polycythaemia vera in adults who cannot tolerate hydroxycarbamide (also called hydroxyurea) or when the condition is resistant to it.

We estimate that:

- Around 660 people with polycythaemia vera are eligible for treatment with ruxolitinib each year from 2027/28 after adjusting for population growth.
- Around 330 people will receive ruxolitinib from year 2027/28 onwards once uptake has reached 48% as shown in table 1.
- If the number of appointments follows the number of cycles, there may be around 700 additional appointments needed each year from 2027/28 after adjusting for population growth as shown in table 2. This is because of shorter treatment cycles (28 days) compared with some comparator options.

Table 1 Estimated number of people in England receiving ruxolitinib

	2023/24	2024/25	2025/26	2026/27	2027/28
Uptake rate for ruxolitinib (%)	30%	40%	50%	50%	50%
Population receiving ruxolitinib each year	180	260	320	320	330

Table 2 Estimated additional appointments each year

	2023/24	2024/25	2025/26	2026/27	2027/28
*Additional appointments	400	550	690	690	700
*Delivery of oral chemotherapy - monthly visits for monitoring blood count and dose adjustment. It is assumed the number of appointments follows the number of treatment cycles.					

This report is supported by a local resource impact template because the list price of ruxolitinib has a discount that is commercial in confidence.

The discounted price of ruxolitinib can be put into the template and other variables may be amended.

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

1 Ruxolitinib

1.1 NICE has recommended ruxolitinib within its marketing authorisation, for treating polycythaemia vera in adults who cannot tolerate hydroxycarbamide (also called hydroxyurea) or when the condition is resistant to it. It is only recommended if the company provides it according to the commercial arrangement.

1.2 Standard treatment to control blood cell count (cytoreductive therapy) in polycythaemia vera is hydroxycarbamide (HC/HU). People treated with HC/HU in the first line who develop a resistance or intolerance are usually prescribed interferon (IFN)-alfa, however, a significant proportion of patients do not tolerate or cannot be prescribed IFN-alfa so continue to receive HC/HU.

1.3 Current treatment options carry a high risk of developing leukaemia, which can be fatal within 3 to 6 months. In people who cannot tolerate hydroxycarbamide or when their condition is resistant to it, there are few options other than busulfan. With busulfan treatment, there is a 20% risk of developing leukaemia. Clinical experts highlighted the unmet need for a treatment option that reduces symptoms and improves quality of life compared with current treatments.

2 Resource impact of the guidance

2.1 We estimate that:

- Around 660 people with polycythaemia vera are eligible for treatment with ruxolitinib each year from 2027/28 after adjusting for population growth.
- Around 330 people will receive ruxolitinib from year 2027/28 onwards once uptake has reached 48% as shown in table 1.
- If the number of appointments follows the number of cycles, there may be around 700 additional appointments needed each year from 2027/28 after adjusting for population growth as

shown in table 2. This is because of shorter treatment cycles (28 days) compared with some comparator options.

2.2 The current treatment and future uptake figure assumptions are based on assumptions from clinical experts in haematology and are shown in the resource impact template. Table 1 shows the number of people in England who are estimated to receive ruxolitinib by financial year.

2.4 This report is supported by a local resource impact template. The company has a commercial arrangement. This makes ruxolitinib available to the NHS with a discount. The size of the discount is commercial in confidence. The discounted price of ruxolitinib can be put into the template and other variables may be amended. It is the company's responsibility to let relevant NHS organisations know details of the discount.

Savings and benefits

2.5 The committee noted that there was a statistically significant improvement in event-free survival with ruxolitinib compared with best available therapy. In high-risk patients there is a risk of thromboembolic events which have significant health care resource use due to the care and rehabilitation required following an event. Ruxolitinib will therefore have resource benefits. These are variable in nature and challenging to quantify.

3 Implications for commissioners

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

3.2 Ruxolitinib falls within the programme budgeting category 3 'Disorders of Blood'.

4 How we estimated the resource impact

The population

4.1 Polycythaemia vera (PV) is a rare disease. In the UK, the prevalence of PV is estimated to be approximately 6.05 per 100,000 patients, which is around 7,700 adults in England.

Table 3 Number of people eligible for treatment in England

Population	Proportion of previous row (%)	Number of people
Adults aged 18 and over (after adjusting for population growth)		46,263,200
Prevalence of polycythaemia vera[1]	0.02	7,700
People who start treatment with hydroxycarbamide (HC) /hydroxyurea (HU)[2]	77.3	5,900
People who are resistant to or intolerant of HC/HU[2]	15.4	910
Total number of people eligible for treatment with ruxolitinib [1]	72	660
Total number of people estimated to receive ruxolitinib each year from year 2025/26[3]	50	330

[1] Company data on file.

[2] Alvarez-Larran A, Kerguelen A, Hernandez-Boluda JC, et al. Frequency and prognostic value of resistance/intolerance to hydroxycarbamide in 890 patients with polycythaemia vera. British Journal of Haematology 2016;172:786-93.

[3] Estimate based on clinical experts in haematology.

Assumptions

4.2 The resource impact template assumes:

- An average daily dose of 25mg for ruxolitinib. This is based on trial data.
- The average number of attendances per year for dose monitoring and receiving further ruxolitinib packs is 13 per year.
- The weighted average number of attendances for other treatment options is 11 per year.

- The proportion of people who receive ruxolitinib as a third-line therapy is very small and not separately included in the resource impact template. Adjustment can be made to the assumptions in the template locally if needed.
- The number of appointments for treatment administration follows the number of treatment cycles needed per year for all treatment options. This can be amended in the template.

Other factors

4.3 Ruxolitinib is an oral tablet. There are potential environmental benefits where this replaces the use of interferon alpha which is delivered by subcutaneous injection using plastic syringes. People may also prefer an oral tablet to an injection.

About this resource impact report

This resource impact report accompanies the NICE guidance on ruxolitinib for polycythaemia vera and should be read with it.