EE601

ATOPIC DERMATITIS

Using Dupilumab in Line with the England NICE Recommendation (TA534): Impact on the Healthcare Resource Utilisation and Non-Medicine Cost

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Background

- Dupilumab, which targets both interleukin (IL)-4 and IL-13 signalling, was the first biologic to be approved by the European Medicines Agency for the treatment of patients with moderate-to-severe (aged ≥12 years) and severe (aged ≥6 months) atopic dermatitis (AD).[1]
- Prior to the approval of dupilumab, systemic immunosuppressants such as ciclosporin, methotrexate, azathioprine and mycophenolate mofetil were commonly used to treat AD.[2]
- The National Institute for Health and Care Excellence (NICE), England, recommends using dupilumab (Technology appraisal guidance, TA534) in patients with moderate-to-severe AD not responding to treatment with at least one other systemic drug.[2]
- As per recent market research in England, dermatologists initiate dupilumab for patients with AD after using at least two immunosuppressants in real-world practice; this may potentially lead to additional healthcare costs and resource use.

Objective

- **This study compared the resource use and non-medicine costs associated with treatment monitoring for dupilumab initiation after a single immunosuppressant (NICE TA recommended pathway) use with the current real-world practice (i.e. use of two or more immunosuppressants before dupilumab initiation) in England.**

Conclusions

- **Following the NICE recommendation to prescribe dupilumab after one systemic treatment instead of 2 or more systemic treatments could result in significant savings for the NHS in terms of healthcare practitioners' time, interactions, and laboratory tests.**

METHODS & RESULTS

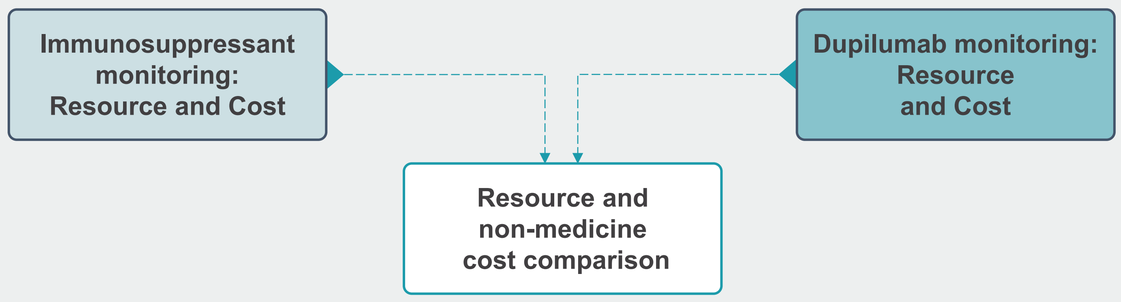
Cost impact model

- An Excel-based cost impact model was developed for adult patients with uncontrolled, moderate-to-severe AD; the model inputs included the cost and resource use associated with treatment monitoring over a time horizon of 5 years (**Figure 1**).
- The treatment options considered by the model included dupilumab and the immunosuppressants ciclosporin and methotrexate; the treatment pathways considered were dupilumab initiation after using a single immunosuppressant (NICE TA534) compared with two or more immunosuppressants (current practice).
- The model considered only non-medicine costs and resources required by adult patients on treatment (treatment monitoring) for moderate-to-severe, uncontrolled AD.
  - As this study focused on the impact of following the TA534 NICE recommendation on healthcare resource use, other costs (drug acquisition and costs associated with diagnostic clinics) were not considered by the model.
  - The model did not make any assumption regarding the relative clinical outcomes associated with each treatment.

Monitoring tests and data sources

- The default monitoring requirements and resource use (interactions with practitioners, monitoring time and laboratory tests) in the model reflected local monitoring protocols, published guidelines and the information available within the summary of product characteristics for the individual treatment regimen.
- Patient data available in the digital repository of the National Health Service (NHS), England, were used to populate the model.
- The model compared the number of tests, healthcare practitioner interactions, total time spent on treatment monitoring and the associated cost between the two patient pathways' cohorts.

Figure 1. Cost impact model



Monitoring test[a]	Cost per test, in £
Urea and electrolytes	23
Full Blood Count	12
Magnesium	10
Liver function test	23
QuantiFERON-TB	41
TB screen	41
HBV/HCV	11
HIV	12
Lipids	23
Creatine phosphokinase	9
Alanine aminotransferase	9
Uric acid	10

Resource use[b]	Cost per hour, in £
GP	217
GPwER	217
Primary Care Practice Nurse	49
Hospital Nurse	50
Community Consultant	119
Hospital Consultant	119
Phlebotomist	30
Pharmacist	48

[a]Costs as per the NIHR Investigation and Intervention Tariff 2020/21, version 1.2; [b]Costs as per the database of health and social care professionals 2019/20; available at https://www.pssru.ac.uk/project-pages/unit-costs/unit-costs-2020/ (accessed 17 October 2024). GP, general practitioner; GPwER, GP with emergency room; HBV, hepatitis B virus; HCV, hepatitis C virus; HIV, human immunodeficiency virus; NIHR, National Institute for Health and Care Research; TB, tuberculosis.

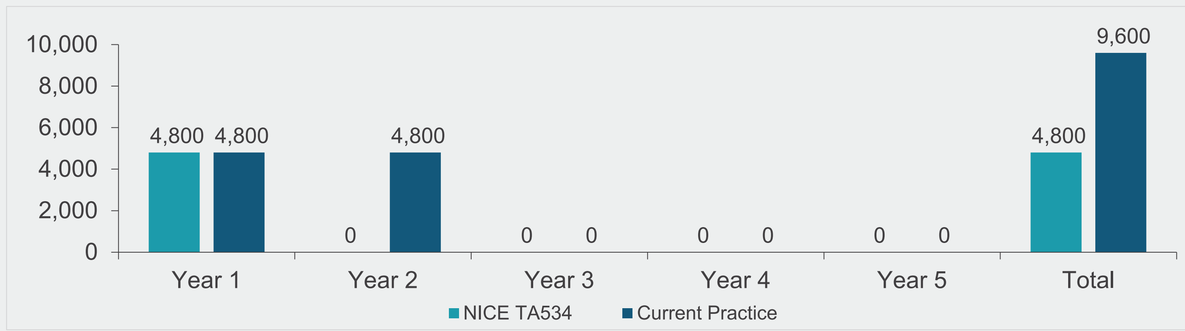
Results

Resource use

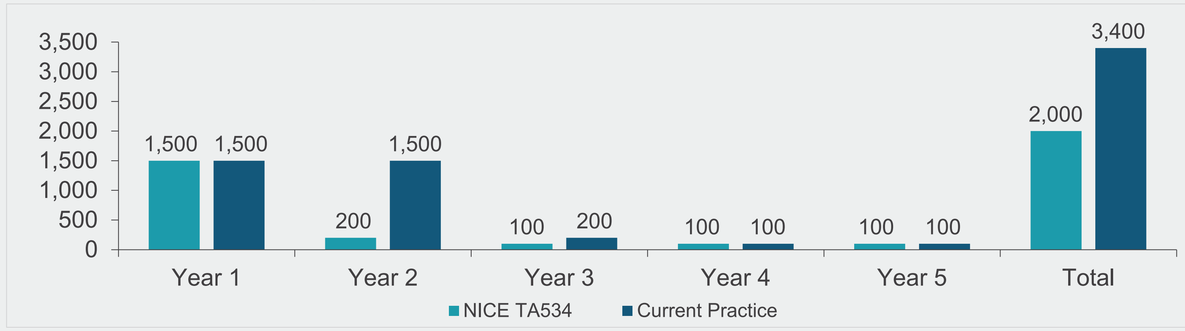
- Treatment with dupilumab as per the NICE TA534 saves 4,800 laboratory tests (4,800 vs. 9,600), 1,400 healthcare practitioner interactions (2,000 vs. 3,400) and 36,000 min of monitoring time (71,000 vs. 107,000) per 100 patients compared with the current practice (**Figure 2A–C**).

Figure 2. Resource use as per the NICE TA534 compared with the current practice

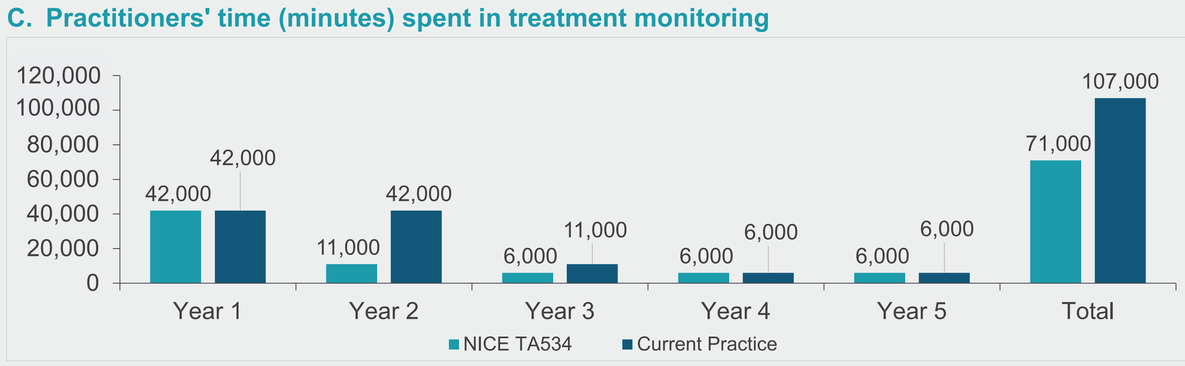
A. Number of tests



B. Number of healthcare practitioner interactions



C. Practitioners' time (minutes) spent in treatment monitoring

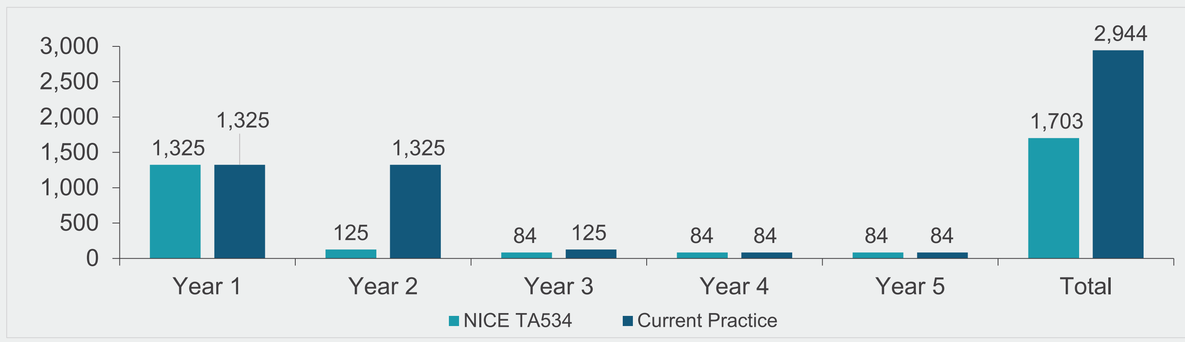


The first-year resource use for both the pathways included only immunosuppressants.

Non-medicine cost

- The non-medicine cost associated with the NICE TA pathway over the 5 years was £1,703 compared with £2,944 for the current practice, leading to a cost saving of £1,241 per patient (**Figure 3**).

Figure 3. Non-medicine cost (£) as per the NICE TA534 versus the current practice



The first-year non-medicine cost for both pathways included only those associated with the use of immunosuppressants.

REFERENCES

1. Ariëns LFM, *et al. Therapeutic Advances in Chronic Disease* 2018.
2. Dupilumab for treating moderate-to-severe prurigo-NICE, England 2018.

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DISCLOSURES:

JT, **KN**, **HR**, **RH** and **MH** – Sanofi – employees, may hold stocks and/or stock options in the company;
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