Budget impact analysis of introducing benralizumab for the treatment of eosinophilic granulomatosis with polyangiitis: A European perspective

Supported by AstraZeneca

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The incorporation of benralizumab into **European healthcare systems** would provide **cost reductions** for the healthcare payer

This study aimed to estimate the budget impact of introducing **benralizumab** for the **treatment of EGPA in Europe**

This reduction would be primarily driven through the **reduced acquisition costs of benralizumab compared with mepolizumab** for the treatment of EGPA

Introduction

- EGPA is a rare autoimmune disease, characterised by vascular inflammation and multisystem organ damage[1]
- Treatment of EGPA is currently suboptimal; therapies are needed that provide sustained remission while also enabling OCS dose reduction to avoid OCS-associated toxicity and improve patient quality-of-life
- The phase 3 MANDARA trial evaluated benralizumab versus mepolizumab for the treatment of patients with EGPA[2]
- Benralizumab was noninferior to mepolizumab for the induction of remission in patients with relapsing or refractory EGPA[2]

Objective

To estimate the budget impact of introducing benralizumab for the treatment of EGPA in Europe

How did we perform this research?

Model structure

- The BIM was a cost calculation model that evaluated the direct healthcare costs under two alternative market scenarios:

1) WORLD WITHOUT BENRALIZUMAB:
reflected the current distribution of treatments for the treatment of EGPA

2) WORLD WITH BENRALIZUMAB:
reflected the addition of benralizumab as a treatment option for EGPA

- The budget impact was defined as the difference in the expected costs between a 'world without benralizumab' and a 'world with benralizumab'

Model inputs

- Market share distribution was based on commercial forecasting on the uptake of benralizumab and mepolizumab within Europe
- The MANDARA trial (NCT04157348)[2,3] was used to extrapolate the rate of relapses for benralizumab and mepolizumab; the MIRRA trial (NCT02020889)[4] was used for SoC
- Discontinuation of biologic treatments due to lack of clinical response was evaluated one year after initiation of treatment
- The treatment-dependent cumulative dose of OCS was captured year-on-year to predict the incidence of associated clinical outcomes
- Healthcare resource use associated with relapse was analysed from the UK Clinical Practice Research Datalink[5]
- Direct medical costs for drug acquisition and OCS-related adverse events were sourced from UK-based sources and literature
- Costs were monetised using UK unit costs and converted to Euros using conversion factors derived from purchasing power parities

Deterministic sensitivity analysis

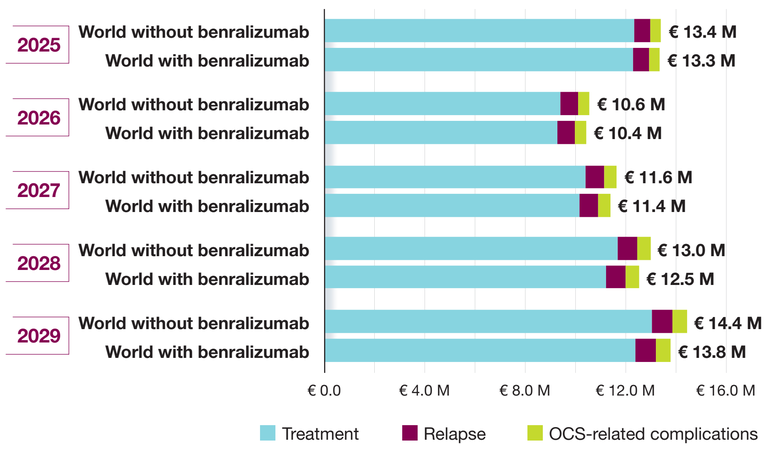
- DSA was used to vary individual parameters (or grouped parameters if appropriate) to assess the impact of each input on modelled results and promote an understanding of the drivers of budget impact

Key features of the BIM

Population	Patients with relapsing or refractory EGPA
Perspective	European healthcare payer
Time horizon	Up to 5 years
Intervention	Benralizumab
Comparators	Mepolizumab SoC (OCS [prednisolone] and IS [azathioprine, cyclophosphamide, myocophenolate mofetil and methotrexate])
Cost elements	Disease management of relapse Drug acquisition and administration Chronic OCS comorbidities and acute events

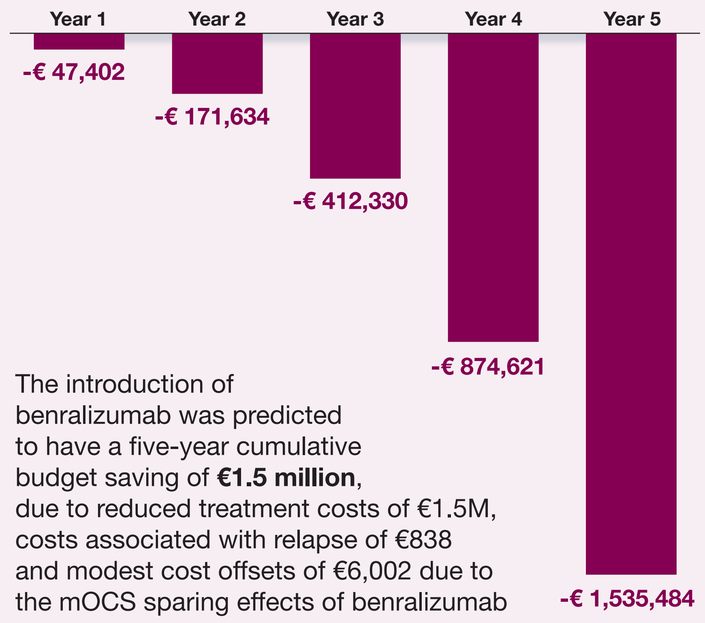
What did we find?

Figure 1. Annual costs



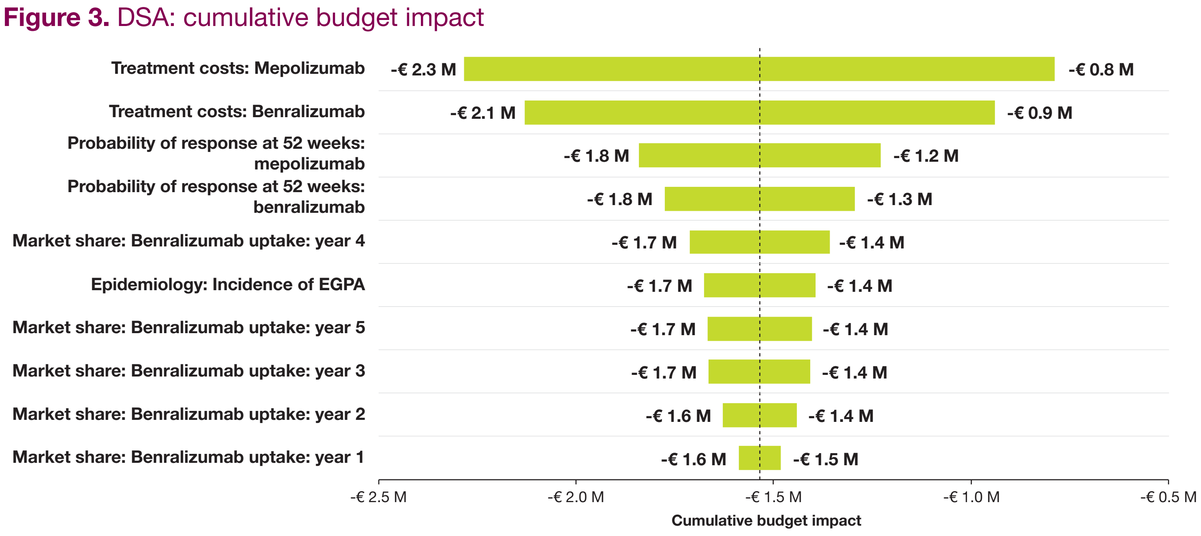
- The annual costs increase from €13.4 and €13.3 (year 1) to €14.4M and €13.8M (year 5) in a world without and with benralizumab, respectively
- Over five years, the total cumulative costs were €63.0M and €61.5M in a world without and with benralizumab, respectively

Figure 2. Cumulative budget impact in a world with benralizumab



The introduction of benralizumab was predicted to have a five-year cumulative budget saving of **€1.5 million**, due to reduced treatment costs of €1.5M, costs associated with relapse of €838 and modest cost offsets of €6,002 due to the mOCS sparing effects of benralizumab

Figure 3. DSA: cumulative budget impact



The cumulative budget impact was most sensitive to the acquisition costs of benralizumab and mepolizumab

The probability of biologic treatment response and market share were also significant drivers of outcome

Limitations

The model has predominantly been populated with UK data which may not reflect the costs in a European settings

The model does not incorporate the possibility of new treatments entering the treatment pathway in the next five years

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Abbreviations

BIM, budget impact model; DSA, deterministic sensitivity analysis; EGPA, eosinophilic granulomatosis with polyangiitis; IS, immunosuppressant; mOCS, maintenance oral corticosteroid; OCS, oral corticosteroid; RCT, randomised controlled trial; SoC, standard of care

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Disclosures

DB and JS are employees of Health Economics & Outcomes Research Ltd., which received funding from AstraZeneca to conduct this study. JP is an employee of AstraZeneca, and may own stock/stock options.

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