Cost-Effectiveness of Dupilumab in the Treatment of Moderate-to-Severe Prurigo Nodularis in France

#EE804

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INTRODUCTION

Dupilumab is the first biologic approved to treat adults with moderate-to-severe prurigo nodularis (MS-PN) who are uncontrolled with topicals. PN is a subtype of chronic pruritus, characterized by an intense itch and pruriginous lesions.

Cost-effectiveness of dupilumab in MS-PN was assessed by the Economic Commission (CEESP) of the French *Haute Autorité de Santé* (HAS).

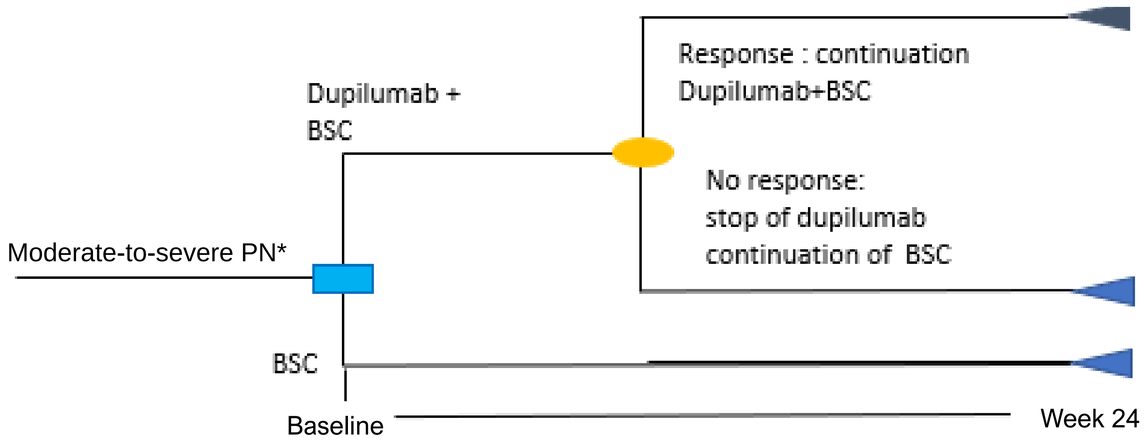
OBJECTIVE

The objective of the presented study was to perform a cost-effectiveness analysis of dupilumab to treat MS-PN versus best supportive care (BSC), from a French societal National Health perspective.

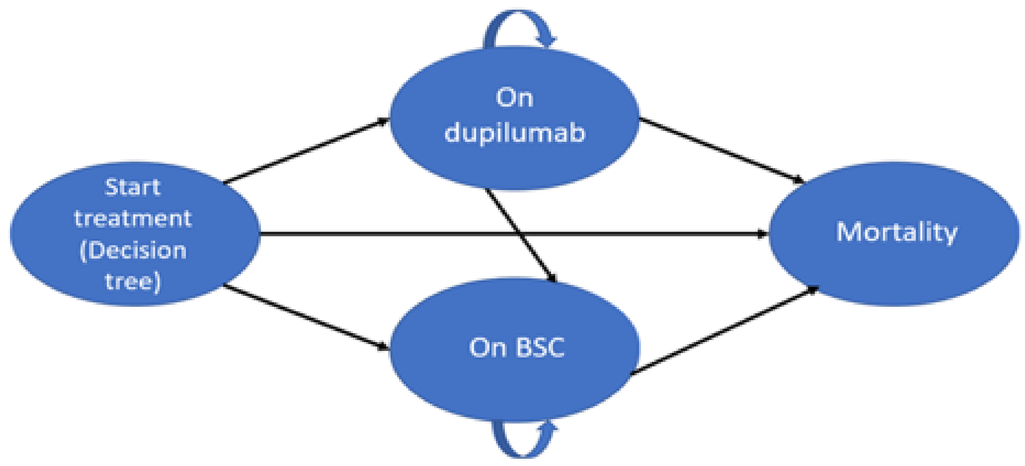
The presented approach highlights the value of dupilumab based on effectiveness related to response-year (ry) gained.

METHODS

The 24-Week decision tree followed by a lifetime horizon Markov model structure is showed below:



*Patients had ≥ 20 PN lesions at baseline, which corresponds to moderate/severe on the IGA-PN scale.



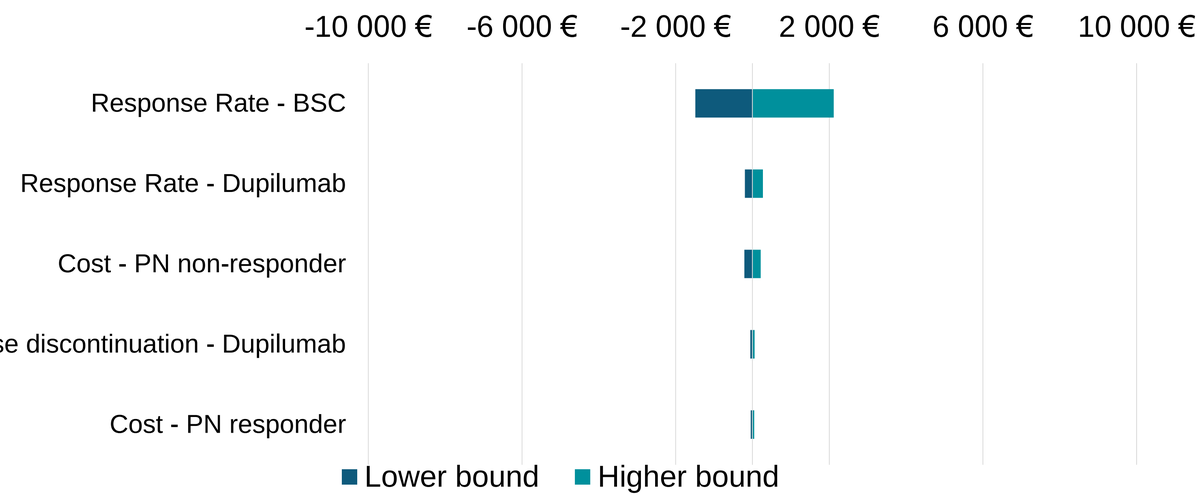
The response to treatment was defined as a minimum improvement of 4 points on the worst-itch numerical rating scale. Costs and healthcare resource utilization were informed by a French patients' survey with PN, with a 2.5% discount rate for costs over a 20-year time horizon. Cost distribution among health states assumed that treatment responders would utilize healthcare resources similarly to patients with mild PN, and non-responders to patients with MS-PN. Sensitivity analysis explored different scenarios, including change in response rate in both treatment arms, cost of disease management, and treatment discontinuation rate.

The model structure was validated by the French Health Authority (HAS).

RESULTS

	Dupilumab + BSC	BSC	Incremental	ICER
Costs (€) - discounted	138,356	35,312	103,043	
Life years in response - discounted	7,844	2,848	4,996	**20,623**

In the base case analysis, over a 20-year time horizon, the treatment with dupilumab versus BSC resulted in a gain of 5 incremental response-years and an incremental cost of €103,043; yielding an ICER (Incremental Cost-effectiveness Ratio) of 20,623 €/ry.



The one-way sensitivity analysis shown in the Tornado diagram describes the responder rates in each treatment arm as the main drivers of the model.

CONCLUSIONS

Dupilumab showed a significantly greater response-year gain in patients with MS-PN versus BSC. The ICER/ry in MS-PN was comparable to atopic dermatitis, another dermatologic indicationof dupilumab reimbursed in France, demonstrating a similar cost-effectiveness of dupilumab in PN.

This analysis based on cost per response-year is limited by the comparison and the interpretation challenges versus strategies in other therapeutic areas as opposed to the traditional cost per QALY analysis.

CONFLICTS OF INTEREST

Noémie ALLALI, Jules TAVI, Anne-Lise VATAIRE, Lisa SUTOUR, Donia BALHOUL, Marine PAYAN are/were Sanofi employees and may hold stock and/or stock options in the company. Ryan THOMAS, Andreas KUZNIK are Regeneron employees and may hold stock and/or stock options in the company. Clea SAMBUS is a Vyoo Agency employee and may hold stock and/or stock options in the company.

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