

Economic Evaluation of Single-Inhaler Extrafine Beclometasone Dipropionate/formoterol fumarate/glycopyrronium (Trimbow®) in Adult Patients with Uncontrolled Asthma in Mexico

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Hurtado-Vilchis, Angélica¹, Paladio-Hernández, José Ángel² ¹ Chiesi México; ² SOMER Health Economics, México

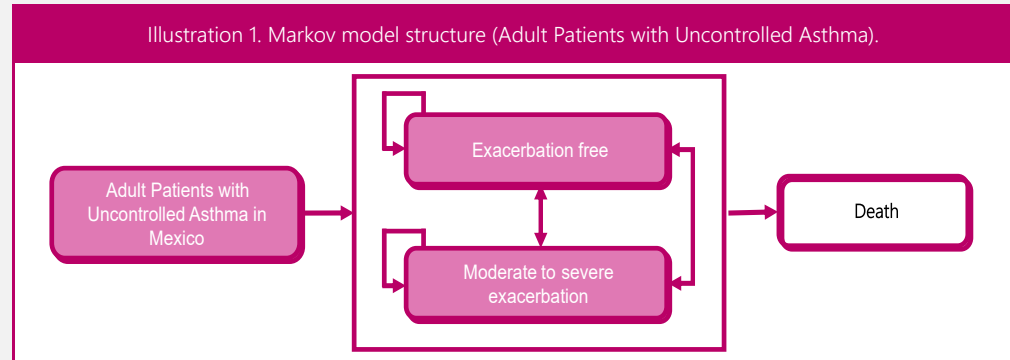
INTRODUCTION

Achieving optimal asthma control remains a global challenge, despite the availability of effective treatments for most adult patients. In Mexico, asthma affects approximately 8.5 million individuals, making it one of the top twenty contributors to the national disease burden. Poor asthma control exacerbates disability and imposes substantial challenges on patients and the public health system.

This study evaluates the cost-effectiveness of extrafine Beclometasone Dipropionate / Formoterol Fumarate / Glycopyrronium (BDP/FF/G, Trimbow®), a single-inhaler triple therapy (SITT), for adults with uncontrolled asthma compared to alternative treatments available in Mexico.

METHODS

A Markov state-transition cohort model was developed to evaluate the cost-effectiveness of BDP/FF/G compared to combinations of inhaled corticosteroids (ICS), long-acting β 2-agonists (LABA), and long-acting muscarinic antagonists (LAMA) from the perspective of the Mexican Social Security Institute (IMSS).



Treatment effectiveness was based on the annualized rate of severe exacerbations (SE) reported in scientific literature.

Drug costs were obtained from IMSS consolidated procurement data for 2024, and exacerbation costs were estimated using the Diagnosis-Related Groups (DRGs) framework published by IMSS. All costs were standardized to 2024 US dollars. A probabilistic sensitivity analysis (PSA) was conducted to address parameter uncertainty.

CONTACT



Angelica Hurtado Vilchis
m.hurtado@chiesi.com

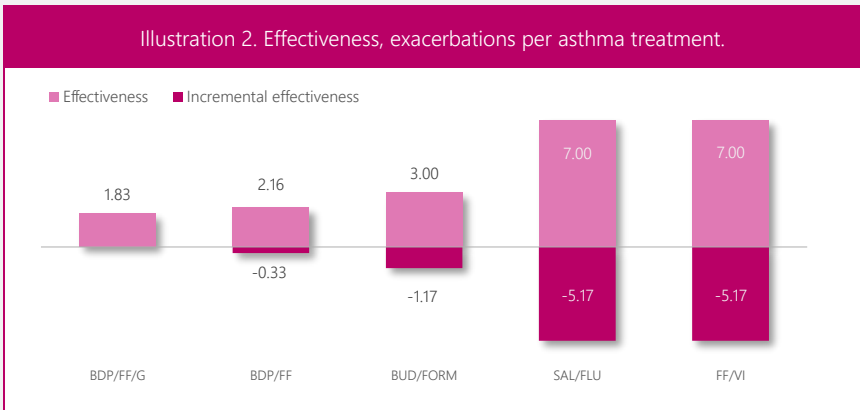
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RESULTS

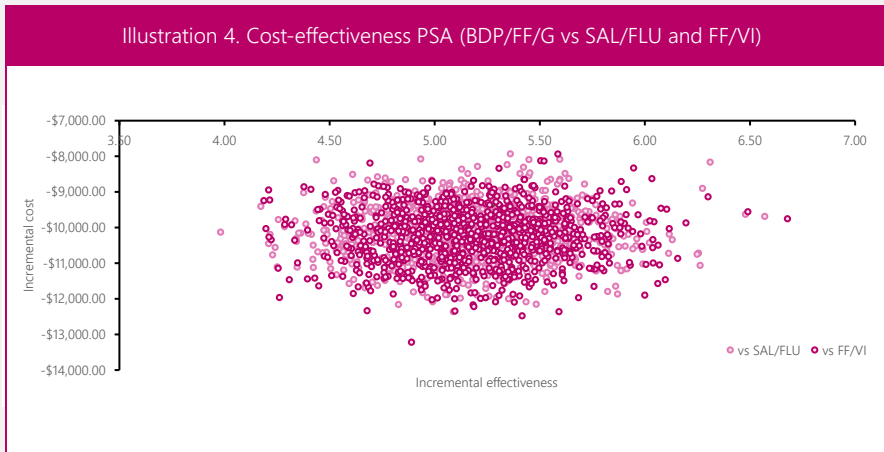
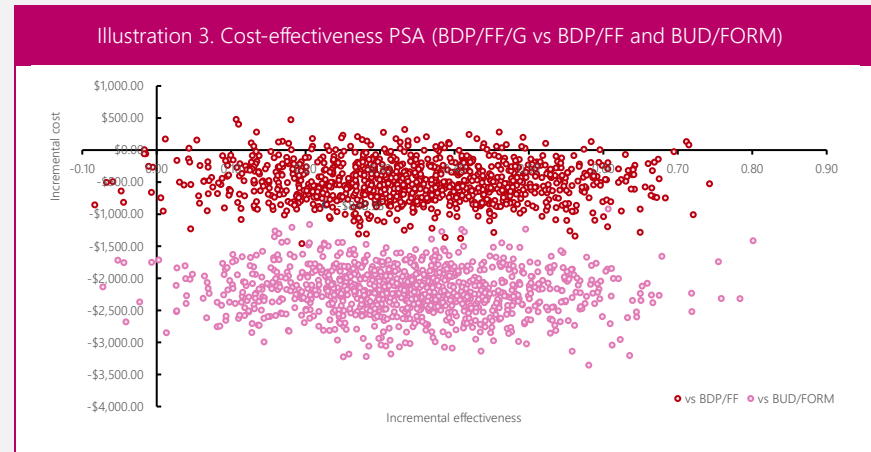
After one year, BDP/FF/G was a dominant alternative to all comparators, demonstrating the lowest incremental cost-effectiveness ratio (ICER), superior asthma control, and a significant reduction in exacerbations (mean reduction: 4.20; 95% CI: 2.80). ICER, incremental cost-effectiveness ratio; INR, 2025 USA dollars; Effectiveness, reduction in exacerbations.

Table 1. Total cost per asthma treatment per patient.

Asthma Treatment	Asthma Treatment cost	Exacerbation cost	Total cost
BDP/FF/G	\$20.10	\$3,861.24	\$3,881.34
BDP/FF	\$5.30	\$4,368.06	\$4,373.36
BUD/FORM	\$9.41	\$6,079.88	\$6,089.29
SAL/FLU	\$3.77	\$14,010.80	\$14,014.57
FF/VI	\$10.67	\$14,085.82	\$14,096.49



The annual per-patient cost for BDP/FF/G was \$3,881.34, compared to Beclometasone/Formoterol (\$4,373.36), Budesonide/Formoterol (\$6,098.29), Salmeterol/Fluticasone (\$14,014.57), and Fluticasone/Vilanterol (\$14,096.49).



Probabilistic sensitivity analysis (10,000 Monte Carlo iterations) confirmed the robustness and consistency of these findings. A series of wide-ranging analyses were therefore performed to assess the sensitivity of the base case results to changes in input parameters and assumptions.

CONCLUSION

The extrafine SITT with BDP/FF/G is a dominant therapeutic option for adults with uncontrolled asthma in Mexico, delivering superior asthma control, significantly reducing exacerbations, and lowering annual per-patient costs compared to therapies currently used by IMSS.

REFERENCES

- Virchow JC, Kuna P, Paggiaro P, Papi A, Singh D, Corre S, Zuccaro F, Vele A, Kots M, Georges G, Petruzzelli S, Canonica GW. Single inhaler extrafine triple therapy in uncontrolled asthma (TRIMARAN and TRIGGER): two double-blind, parallel-group, randomized, controlled phase 3 trials. Lancet. 2019 Nov 9;394(10210):1737-1749.