Proprietary

Dominating RSV: Cost-Effectiveness of Clesrovimab in Infants Born to Unvaccinated Mothers in Argentina

EE552

Perelli L[1]; Caballero MT[2,3,4]; Shi G[5]; Ruiz A[1]; Tassara N[1]; Kura K[6]; Aguiar-Ibañez R[7]

[1] MSD Argentina, Buenos Aires, Argentina [2] Centro Infant de Medicina Traslacional, Buenos Aires, Argentina [3] Escuela de Bio y Nanotecnologías, Universidad Nacional de San Martín[4] Consejo Nacional de Investigaciones Científicas y Técnicas, Buenos Aires, Argentina [5] Biostatistics and Research Decision Sciences, Merck & Co., Inc., Rahway, NJ, USA [6] Health Economic and Decision Sciences, Biostatistics and Research Decision Sciences, MSD (UK) Limited, London, United Kingdom [7] Health Economic and Decision Sciences, Merck Canada Inc., Kirkland, Quebec, Canada

INTRODUCTION

Respiratory syncytial virus (RSV) is a major cause of medically attended lower respiratory infection (MALRI) and hospitalization among infants.[1–3] Although the risk of severe RSV disease is higher among preterm infants and those with underlying conditions, a substantial proportion of the population-level burden occurs among otherwise healthy, full-term infants.[3,4] In Argentina, maternal RSV vaccination is included in the National Immunization program,[5] and nirsevimab is registered as a long-acting monoclonal antibody for RSV prevention in infants.[6,7] Clesrovimab is a long-acting monoclonal antibody administered as a single dose to provide protection during an infant's first RSV season.[8,9] Evidence on its comparative economic value versus nirsevimab in Argentina remains uncertain.

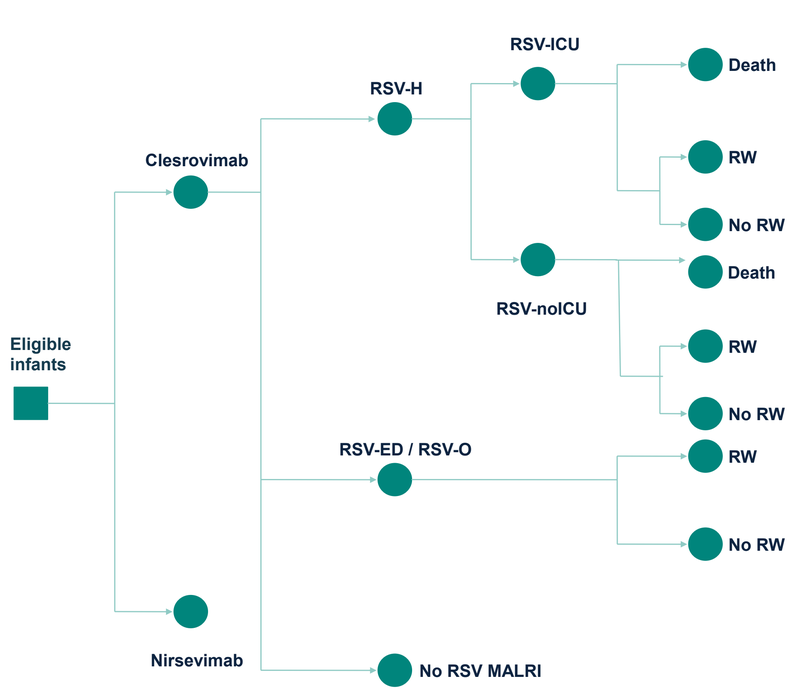
OBJECTIVE

To estimate the projected cost-effectiveness of introducing clesrovimab versus nirsevimab for the prevention of RSV infections among infants entering their first RSV season in Argentina.

METHODS

- A published static decision-tree model was adapted to Argentina, with a 12-month post-dose horizon and lifetime consequences captured for RSV-related mortality (Figure 1).[10]
- Populations comprised infants born to mothers who did not receive maternal RSV vaccination and for whom an infant mAb is therefore the relevant RSV prevention strategy, as well as infants at high risk for severe RSV disease (<32 weeks' gestational age or congenital heart disease/chronic lung disease).
- Seasonal administration with catch-up was considered, with administration occurring either at birth (for infants born during the RSV season) or within the first month of the RSV season (for infants < 8 months-old, born prior to the RSV season)
- Argentinian societal perspective, 85% infant mAb uptake applied equally to both mAbs, acquisition-cost parity per dose (Table 1).
- Efficacy against RSV-associated MALRI and duration of protection were derived from the respective randomized clinical trials,[7,8,11] with Argentinian epidemiological, resource-use, and cost inputs used where available.[12,13]
- Deterministic and probabilistic sensitivity analyses assessed uncertainty.
- All costs were reported in 2025 USD, applying consumer price index and currency exchange adjustments.[14,15]

Figure 1. Decision-tree model structure



Note: The same clinical-event structure was applied to both interventions. Abbreviations: ICU, intensive care unit; MALRI, medically attended lower respiratory infection; RSV, respiratory syncytial virus; RSV-ED, RSV emergency department visit; RSV-H, RSV hospitalization;RSV-ICU, RSV hospitalization with ICU admission; RSV-noICU, RSV hospitalization without ICU admission; RSV-O, RSV physician office visit; RW, recurrent wheezing.

RESULTS

Among 457,359 considered infants born annually in Argentina, 35% would be born to unvaccinated mothers and would therefore be eligible for either clesrovimab or nirsevimab in the model.

Compared with nirsevimab, clesrovimab avoided 3,152 RSV-related events among infants born to mothers who did not receive maternal RSV vaccination, including 589 hospitalizations and 64 ICU admissions. In this population, clesrovimab generated 123.32 additional QALYs and reduced total costs by USD 1,782,721.

Among infants at high risk for severe RSV disease, clesrovimab avoided 351 RSV-related events, including 104 hospitalizations and 9 ICU admissions, generated 13.01 additional QALYs, and reduced total costs by USD 361,482.

At price parity, clesrovimab was dominant versus nirsevimab in both populations (Table 2).

At a willingness-to-pay threshold of USD 13,620 per QALY gained, the probability of clesrovimab being cost-effective versus nirsevimab was 67% among infants born to mothers who did not receive maternal RSV vaccination and 76% among infants at high risk for severe RSV disease.

Deterministic sensitivity analyses identified intervention costs, uptake, and efficacy as the principal drivers of uncertainty.

Table 1. Key base-case model parameters

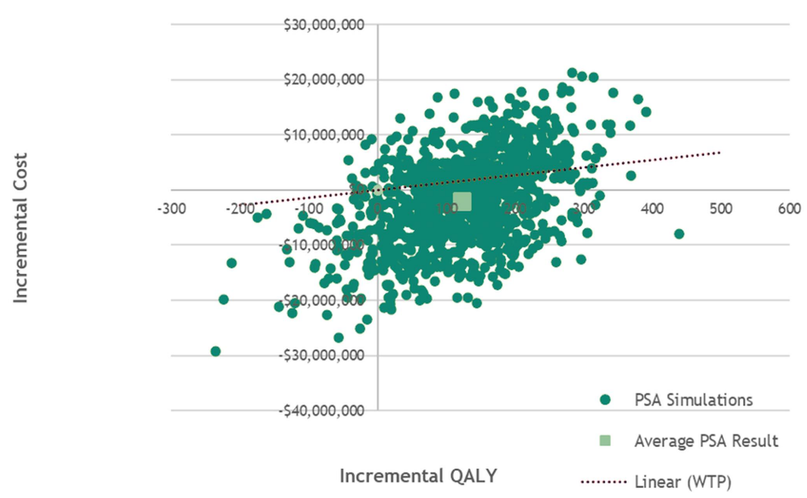
Parameter	Base-case specification
Modelled populations	Infants born to mothers who did not receive maternal RSV vaccination; high-risk infants
High-risk definition	<32 weeks' gestational age, congenital heart disease, or chronic lung disease
Administration strategy	Seasonal administration with catch-up
Intervention uptake	85% for both interventions
Perspective	Argentinian societal perspective
Analytic horizon	12 months post-dose; lifetime consequences captured for RSV-related mortality
Costs included	Intervention, direct medical, caregiver productivity, and premature mortality costs
Discounting	3% annually for lifetime QALYs and productivity losses associated with premature mortality
Cost-effectiveness threshold	USD 13,620 per QALY gained

Table 2. Incremental deterministic base-case results

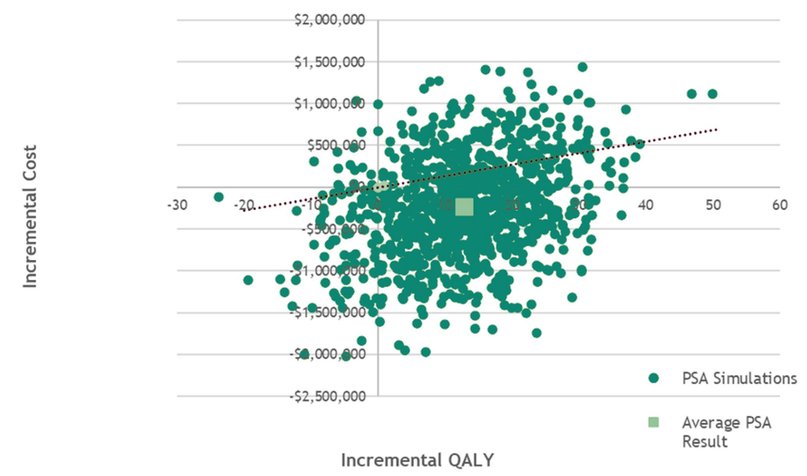
Outcome	Infants born to unvaccinated mothers	High-risk infants*
All RSV-related events avoided	**3,152**	**351**
Total RSV hospitalizations avoided	**589**	**104**
Without ICU admission	525	95
With ICU admission	**64**	**9**
Emergency department visits avoided	656	48
Outpatient visits avoided	1,728	127
Recurrent wheezing cases avoided	179	71
RSV-related deaths avoided	≈3	0 (rounded)
QALYs gained	**123.32**	**13.01**
Total cost savings, USD	**1,782,721**	**361,482**
Incremental cost-effectiveness	**Dominant**	**Dominant**

*Component events may not sum exactly to the total due to rounding.

A. Probabilistic cost-effectiveness plane: infants born to unvaccinated mothers



B. Probabilistic cost-effectiveness plane: high-risk infants



CONCLUSIONS

At price parity, **clesrovimab was a dominant strategy** versus nirsevimab in both populations, providing **greater health benefits at lower total costs**. The largest absolute reductions in RSV-related hospitalizations and intensive care unit admissions, together with the greatest **QALY gains and cost savings, were projected among infants born to mothers who did not receive maternal RSV vaccination.** These findings highlight the population-level value of extending RSV protection with clesrovimab beyond high-risk infants.

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Contact information

lucas.perelli@msd.com

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