

Economic Impact of the Inclusion of Naxitamab for the Treatment of Refractory/Relapsed Nb- HR in the Brazilian Private Healthcare Population

EE388

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Introduction

High-risk Neuroblastoma (HR-NB) is a rare malignant tumor in pediatric patients, 70% of which have a metastatic stage at the time of diagnosis with high rates of refractory/relapse disease after available therapies. Anti-GD2 immunotherapy is emerging as new options for this population with poor prognosis.

Objectives

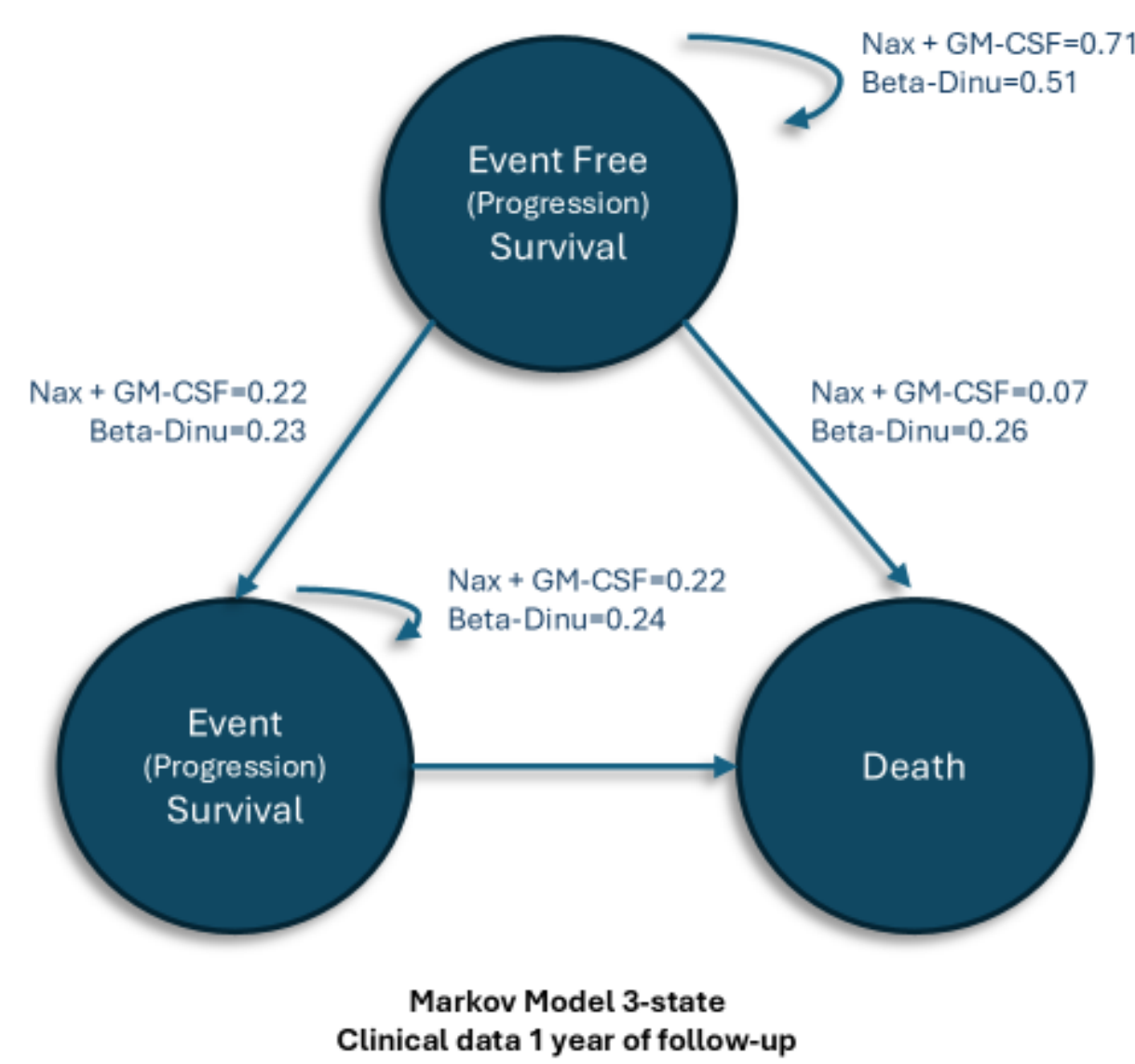
We aim to demonstrate the economic impact of incorporating the immunotherapy options Naxitamab + GM-CSF and Betadinutuximab for the treatment of refractory/relapsed HR-NB in the private health system of Brazil.

Methods

A BIM was carried out over a 5-year time horizon and a fixed market rate to simulate the impact of Naxitamab + GM-CSF inclusion.

For the CEA, a 3-state Markov model, based on published OS and EFS data for Naxitamab + GM-CSF in patients with one or more episodes of complete response after prior treatments versus Beta-Dinutuximab in patients with incomplete response after prior treatments.

Deterministic and Montecarlo-type probabilistic sensitivity analyzes were added, based on the LYs obtained among the immunotherapy options.



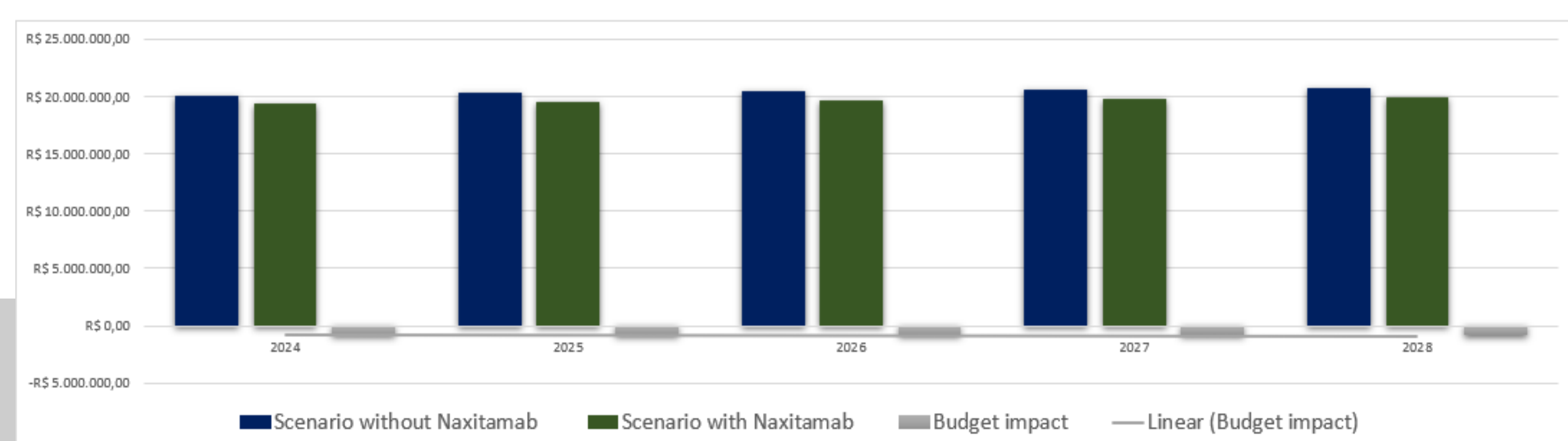
Results

According to the incidence model, a cohort of 17 patients was estimated within the horizon defined for the BIM, showing an accumulated cost of R\$ 98,299,546.6 and R\$ 102,150,478.4 in Naxitamab and Betadinutuximab arms, respectively.

HMO: TOTAL LIVES	Population	Value Model
Country Population (n)	203.080.756	
Country Population < 15 years (n)	28.431.306	14%
Payer Population (n)	50.770.189	25,00%
Payer Population < 15 years (n)	11.880.224	23%
Childhood Cancer Incidence (cpmill)	37	
Adjustment Factor - diagnosis	37	100%
Childhood Cancer Payer Population (n)	440	
Neuroblastoma Incidence (n)	44	10%
High Risk Neuroblastoma Incidence (NB-AR)	27	60%
NB-AR Patients for Induction + consolidation (BMT)	26	95%
NB-AR Patients for Post-Consolidation/Maintenance	18	55%
Pte NB-AR with Incomp Response. Post Induction (1L)	6	22%
Pte NB-AR with Incomp Response. Post Relapse (2L)	11	60%

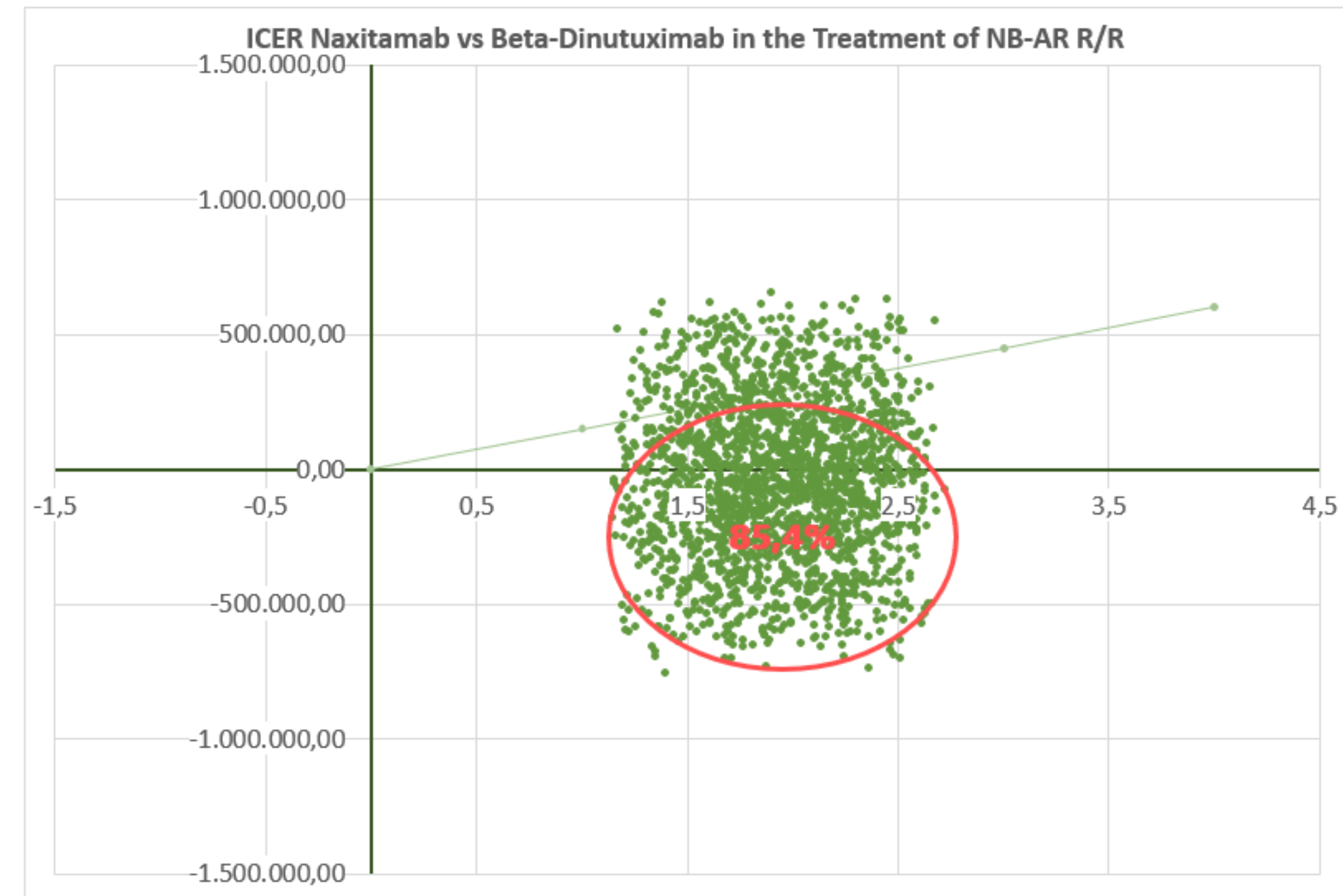
BUDGET IMPACT

	2024	2025	2026	2027	2028	Total 5 years
Scenario without Naxitamab	R\$ 20.105.818,74	R\$ 20.266.665,29	R\$ 20.428.798,61	R\$ 20.592.229,00	R\$ 20.756.966,83	R\$ 102.150.478,48
Scenario with Naxitamab	R\$ 19.347.857,17	R\$ 19.502.640,02	R\$ 19.658.661,14	R\$ 19.815.930,43	R\$ 19.974.457,88	R\$ 98.299.546,64
Budget Impact	-R\$ 757.961,57	-R\$ 764.025,27	-R\$ 770.137,47	-R\$ 776.298,57	-R\$ 782.508,96	-R\$ 3.850.931,84



CEA base case showed 3.2 and 1.6 LYs gain, average cost per LYs of R\$352,912.5 and R\$740,255.8, average treatment costs of R\$1,14 and R\$1,18million for Naxitamab and Betadinutuximab arms, respectively.

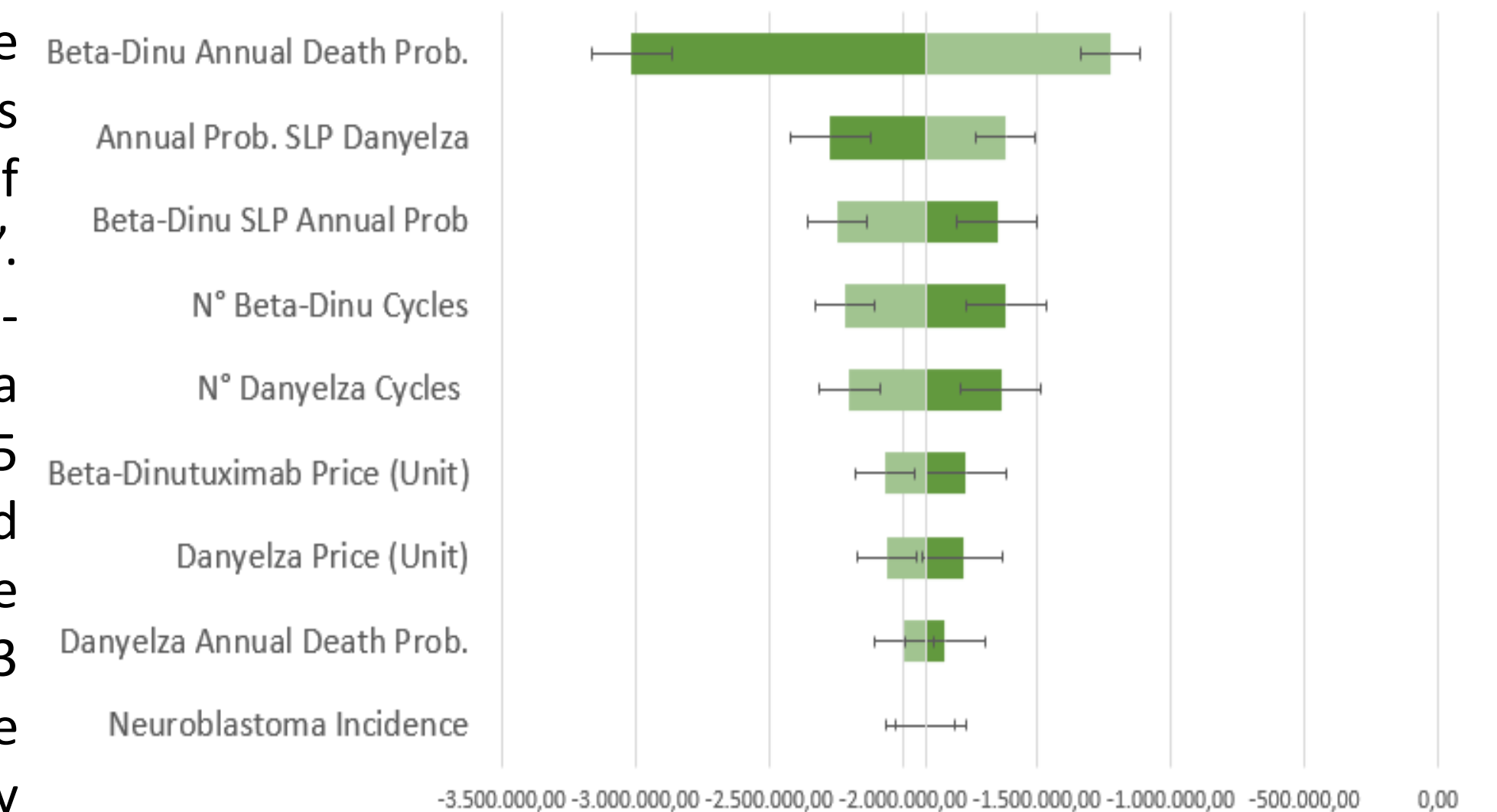
	Costs R\$	Years gained
Beta-Dinutuximab + QMT Treatment	R\$ 1.189.248	1,6065
Naxitamab + GM-CSF Treatment	R\$ 1.148.584	3,2546
Difference	-R\$ 40.664	1,648
RCEI		
Alternative 2 vs. 1		-R\$ 24.674
Patient N°: 1.000		-US\$4.935



In the Brazilian healthcare system, only the public market has a threshold of cost effectiveness, which was used to limit customers' willingness to pay considering a conservative perspective. This threshold is 1 GDP per capita and is extended to 3 GDP per capita in cases of rare diseases.

The variable with the greatest impact in the deterministic analysis was the "probability of death of the Betadinutuximab". Naxitamab ICER was -R\$24,674/LYs with a probability of 0.85 and 0.55 of being cost effective and dominant compared to the competitor with a WTP of 3 GDP per capita after the probabilistic sensitivity analysis.

Tornado Chart



Conclusions

- Currently, in the world we do not have information with efficiency data on the economic impact that the incorporation of anti-GD2 antibodies in the treatment of HR-NB R/R would represent
- The inclusion of Naxitamab + GM-CSF could be a cost-saving strategy compared to Betadinutuximab for the treatment of the cohort of patients with HR-NB estimated for the private sector for patients who previously showed some degree of response to treatments
- This analysis shows how Naxitamab + GM-CSF would generate a greater gain in life years with a similar investment (3.2 vs 1.6 LYs, ICER -US\$4,935) compared to the current approach of anti-GD2 in R/R (1.7 vs 1.4 LYs, ICER -US\$22,892) with Betadinutuximab in the private health sector in Brazil

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