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A cost analysis on complications of Fabry disease patients treated with agalsidase alfa and agalsidase beta in Colombia

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INTRODUCTION

Fabry disease is a chronic orphan condition that represents both a burden for patients and a financial challenge for the healthcare system. The disease progression is associated with complications affecting the heart, brain, and kidneys.

OBJECTIVE

To determine the comparative costs associated with the complications related to Fabry disease, in patients treated with enzyme replacement therapy in Colombia.

METHODS

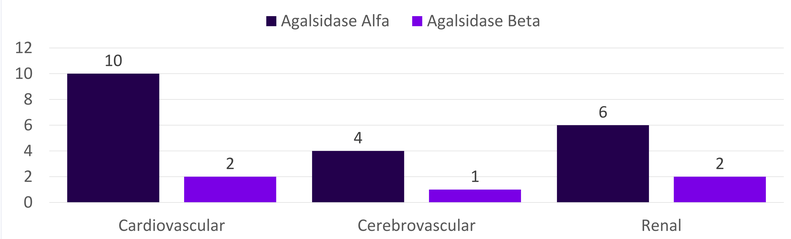
- A cost analysis model was developed from the healthcare system perspective for expected complications and costs among Fabry patients treated with agalsidase alfa or agalsidase beta.
- Complications associated with Fabry disease include cardiovascular (myocardial infarction; needing cardiovascular devices; severe arrhythmia; or congestive heart failure), cerebrovascular (stroke; or transitory ischemic attack), and renal (end stage kidney disease needing dialysis; or kidney transplantation) events.
- The analysis was developed for a hypothetical cohort of 100 Fabry patients for a 1-year time horizon.
- Clinical data for occurrence of complications was obtained from published literature[1].
- Costs of complications were obtained from published literature[2,3,4,6].
- All costs are expressed in 2022 USD$ using an exchange rate of COP$4,800 per USD$1.

POSTER HIGHLIGHT: The treatment of patients with an orphan disease such as Anderson-Fabry disease with the enzyme replacement therapy Agalsidase Beta allows the greatest reduction in the occurrence of complications associated, which improves overall quality of life and avoids healthcare resource use for this population.

Table 1: Inputs Summary

Event	Agalsidase Alfa probability (annual)	Agalsidase Beta probability (annual)	Annual Cost per Event
Cardiovascular	9.95%	1.86%	$ 4,781[2,3,4]
Cerebrovascular	3.57%	0.91%	$ 3,554[5]
Renal	5.03%	1.59%	$ 8,484[6]

Figure 1: Total events and costs for Agalsidase Alfa and Agalsidase Beta



Treatment	Cardiovascular	Cerebrovascular	Renal	Total
Agalsidase Alfa	$ 47,806	$ 14,216	$ 50,906	$ 112,928
Agalsidase Beta	$ 9,561	$ 3,554	$16,969	$ 30,084
Difference	$ 38,235	$ 10,662	$ 33,937	$ 82,844
Difference %	66.7%	80.0%	75.0%	73.4%

CONCLUSIONS

The results suggest that the treatment of Fabry Disease with agalsidase beta is associated with better health outcomes, given a lower occurrence of clinical complications, as well as the potential avoided costs and reduced use of healthcare resources for the management of these events.

RESULTS

Cardiovascular, cerebrovascular, and renal events for agalsidase alfa were 10, 4 and 6 respectively, whereas for agalsidase beta the number of events were 2, 1 and 2, respectively. This implies a total of 20 vs 5 events (75% less events in agalsidase beta treated patients) in the cohort of 100 patients.

Expected costs of complications for agalsidase alfa were USD$112,928 compared to USD$30,084 for agalsidase beta, for a total difference of USD$82,844 (73.4% less). Costs avoided were mainly due to number of cardiovascular events and the cost of renal events.

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