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A cost analysis on renal disease progression of Fabry disease patients treated with agalsidase beta based on renal disease stage in Colombia

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INTRODUCTION

Fabry disease is known to have a significant impact on renal function. Evidence suggests that treatment with agalsidase beta reduces the progression of renal disease in Fabry patients. However, to the best of our knowledge, there are no economic analyses comparing the costs of renal disease progression between untreated and treated patients with agalsidase beta.

OBJECTIVE

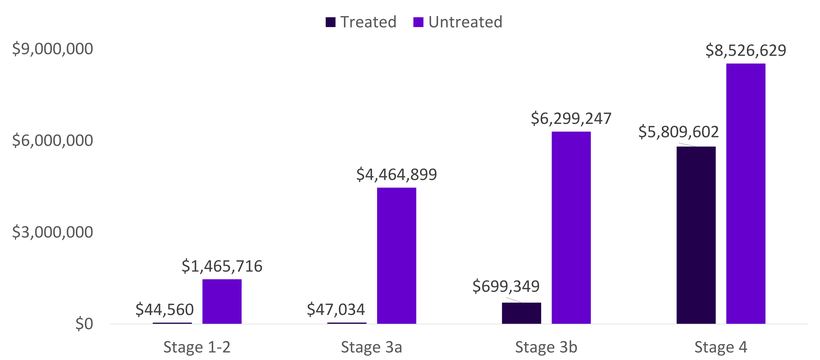
To develop an economic analysis of the impact of treatment with agalsidase beta on renal disease progression in a Colombian population.

METHODS

- A cost-analysis model was developed using the annualized eGFR of agalsidase beta treated vs untreated Fabry patients.
- Simulation scenarios were performed depending on the starting stage of renal disease for a hypothetical cohort of 100 patients.
- Clinical data for renal disease progression was obtained from published literature[1].
- Costs of renal disease stages were obtained from published literature[2].
- The average yearly cost of treatment per patient with kidney disease stages 1-4 and 5 (dialysis) were USD$32.9 and USD$6,631, respectively.
- All costs are expressed in USD$ for a 25-year time horizon with a 5% yearly discount rate using an exchange rate of COP$4,800 per USD$1.

POSTER HIGHLIGHT: Treated versus untreated patients with agalsidase beta face lower progression rates of renal disease, and therefore an overall lower costs associated with this complication. Early treatment is associated with a cost reduction up to 98%. On the other hand, late treatment (stage 4) reaches a cost reduction of 32%. Results show that treatment with agalsidase beta offers the best clinical outcomes and reduce renal disease costs even in an advance stage.

Figure 1: Total costs for treated and untreated patients



Stage	Treated	Untreated	Difference	Difference %
Stage 1-2	$ 44,560	$ 1,465,716	$ 1,421,156	97.0%
Stage 3a	$ 47,034	$ 4,464,899	$4,417,865	98.9%
Stage 3b	$ 699,349	$ 6,299,247	$ 5,599,898	88.9%
Stage 4	$ 5,809,602	$ 8,526,629	$ 2,717,027	31.9%

CONCLUSIONS

The results suggest that reduced progression of renal disease with agalsidase beta treatment translates into reduced overall costs for the management of this complication associated with Fabry disease. Early initiation of treatment with agalsidase beta provides the best clinical outcomes for patients, which are associated with the lowest accumulated costs when initiated in stage 1-2, and greater percentage of costs avoided when treatment is initiated at stages 1-2 and 3a.

RESULTS

When the cohort starts in stage 1-2 renal disease, the expected cost of treated and untreated patients would be USD$44,560 and USD$1,465,716 respectively (97.0% costs avoided).

Starting in stage 3a renal disease, the expected cost of treated and untreated patients would be USD$47,034 and USD$4,464,899 respectively (98.9% costs avoided).

For stage 3b renal disease, the expected cost of treated and untreated patients would be USD$699,349 and USD$6,299,247 respectively (88.9% costs avoided).

Finally, when starting in stage 4 renal disease, the expected cost of treated and untreated patients would be USD$5,809,602 and USD$8,526,629 respectively (31.9% costs avoided).

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