

INTRODUCTION

Brazil ranks second globally in absolute terms for kidney transplants.¹ One of the primary complications faced by these patients is cytomegalovirus (CMV) infection, leading to high levels of morbidity and mortality.² CMV prophylaxis in patients at risk for the disease has been shown to reduce both CMV incidence and related mortality, while also contributing to better long-term graft survival.³ Data from the Brazilian health insurer Unimed Campinas, covering 559,779 individuals, revealed 205 patients with ICD-10 code Z940 (transplanted kidney) between September 2022 and October 2023. Currently, the intravenous medication ganciclovir is used by the insurer for this purpose.

OBJECTIVE

This study aims to conduct a cost-minimization analysis to inform the decision-making process regarding the adoption of oral valganciclovir (VO) versus intravenous ganciclovir (GI) for cytomegalovirus (CMV) prophylaxis in renal transplant recipients from the perspective of a Brazilian private health insurance company.

METHODS

Effectiveness data for the outcomes of interest: CMV disease, rejection, and safety were systematically extracted from the literature in October 2023. Costs were obtained from internal databases from September/2022 to October/2023, encompassing VO (450mg) and GI (500mL) acquisition costs, and GI infusion costs over the 200-day treatment horizon. Treatment cost estimate considered standard dosing with a 7-day induction and 193-day maintenance period, assuming a 70kg weight for GI dosage calculations. Additionally, univariate sensitivity analysis was performed.

RESULTS

Studies comparing valganciclovir to ganciclovir⁴ did not reveal significant differences in treatment effects, emphasizing the need for an economic analysis for decision making. Therefore, our analysis focused solely on cost variables. VO treatment costs were US\$ 18,487.11, while GI treatment, including acquisition and administration, amounted to US\$ 11,243.56, resulting in savings of US\$ 7,243.55 per patient (Figure 1).

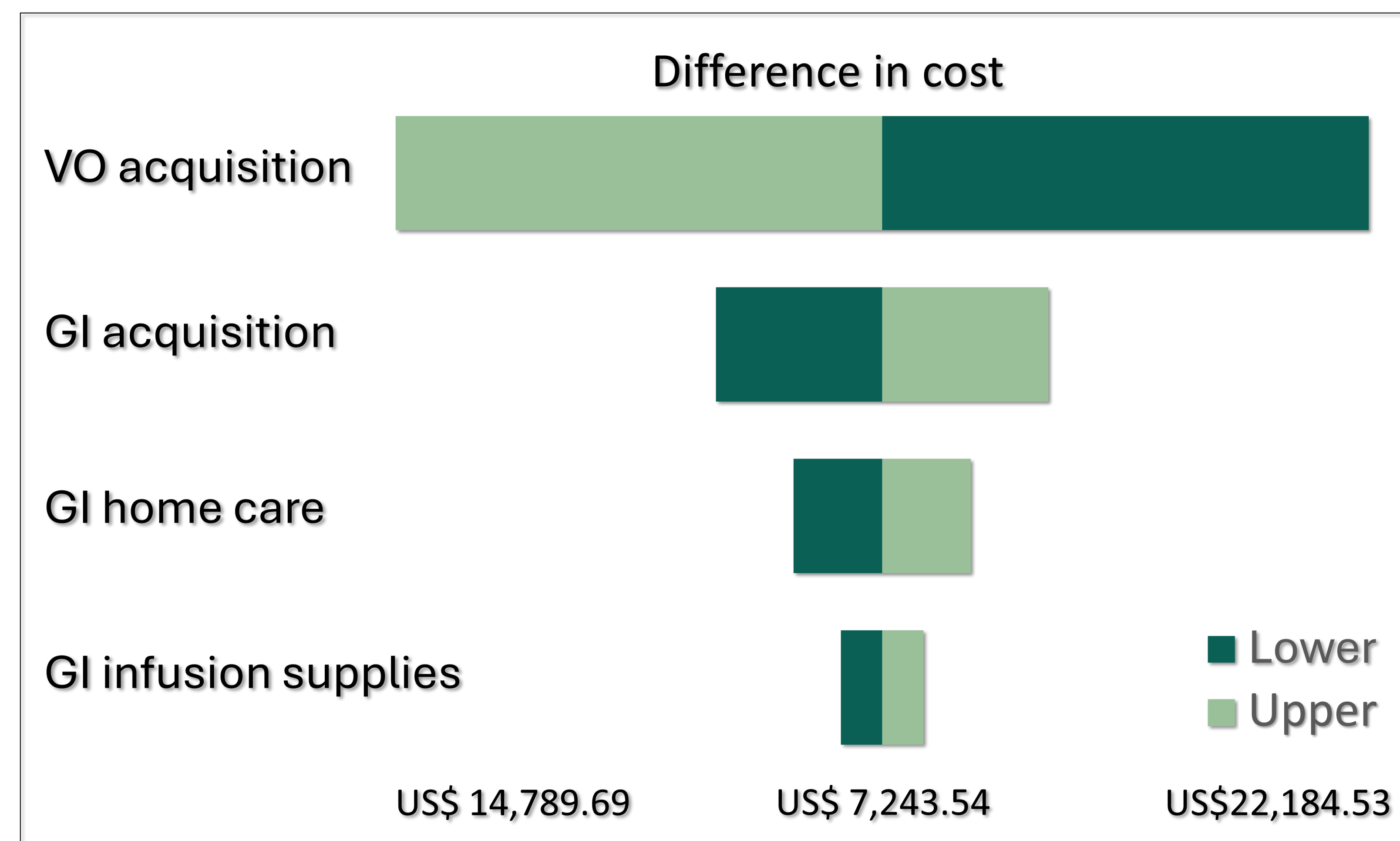
CONCLUSION

In the context of CMV prophylaxis for renal transplant recipients, the cost-minimization analysis between VO and GI highlighted a substantial disparity in total costs. Despite VO not incurring administration costs, its significantly higher acquisition cost makes it more expensive. Therefore, given the similar effectiveness between VO and GI, opting for GI represents a more economically advantageous choice, especially in a scenario of limited resources.

FIGURE 2. COST MINIMIZATION ANALYSIS

	COSTS OVER 200-DAY TREATMENT HORIZON	
	VO 450MG	GI 500MG
AQUISITION	US\$ 18.487,11	US\$ 6.309,05
HOME CARE	-	US\$ 3.370,52
INFUSION	-	US\$ 1.563,99
TOTAL	US\$ 18.487,11	US\$ 11.243,56
SAVINGS		US\$ 7.243,55

FIGURE 2. ONE WAY SENSITIVITY ANALYSIS



Sensitivity analysis showed that the greatest impact on treatment costs was from VO acquisition, followed by GI acquisition (Figure 2).

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