

Comparative Cost-effectiveness analysis of Isavuconazole versus Voriconazole for the treatment of invasive aspergillosis in Algerian hospital setting

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Introduction

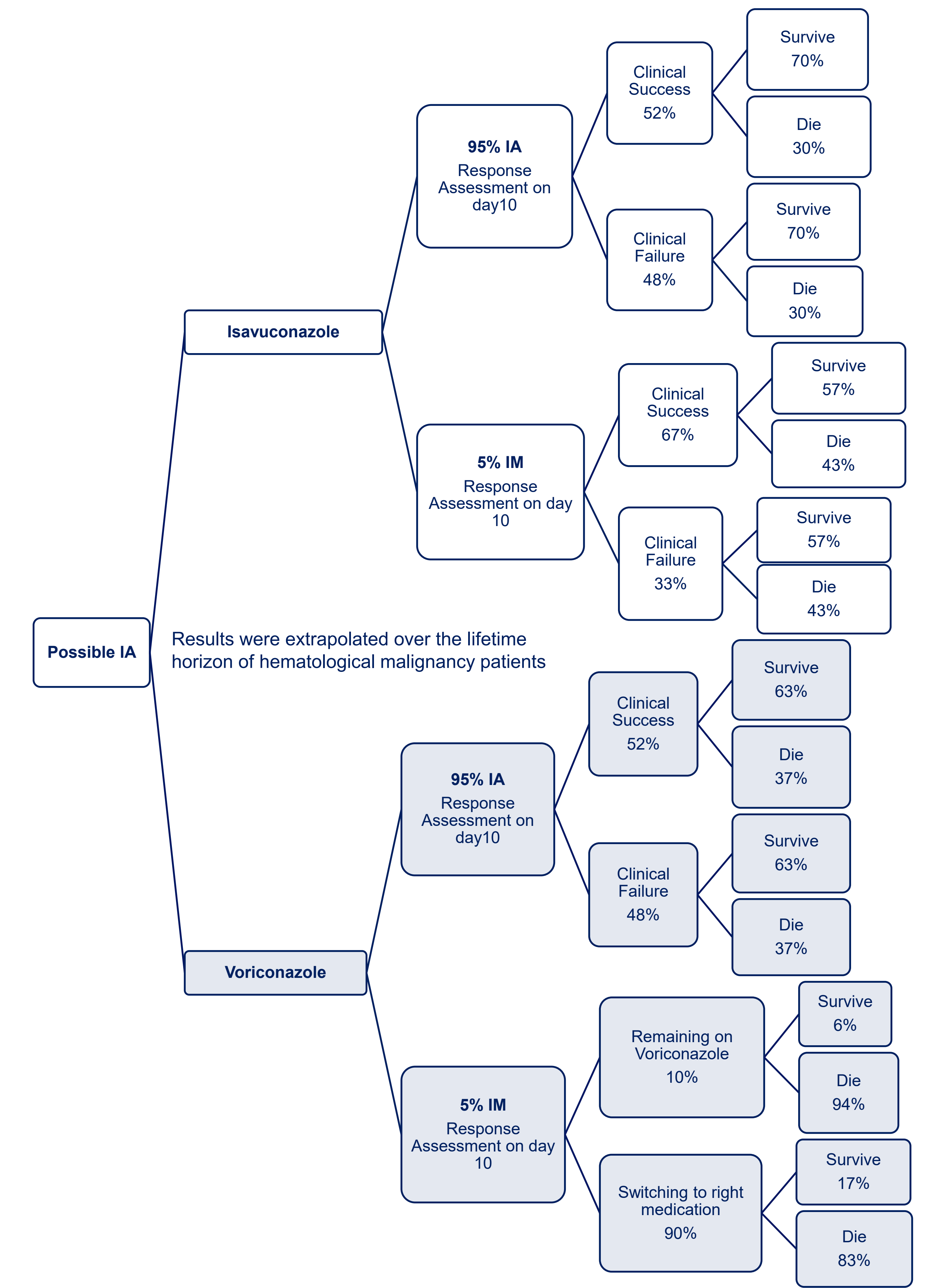
Invasive Aspergillosis (IA) is a severe fungal infection with high morbidity and mortality, particularly among immunocompromised patients. The selection of an optimal antifungal treatment is essential to improve clinical outcomes and ensure efficient use of healthcare resources. Isavuconazole, a novel broad-spectrum azole, has recently been introduced in Algeria.

Objective

This study aims to assess the potential cost-effectiveness of Isavuconazole versus Voriconazole for the treatment of Invasive Aspergillosis (IA) in Algerian hospital setting.

Method

A cost-utility analysis using a decision tree model was conducted. Patients with possible IA were included, with 5% estimated to actually have mucormycosis.



Only direct medical costs were considered, including cost of medications acquisition, intravenous administration, treatment switching, step-down therapy, nephrotoxicity management, and laboratory monitoring.

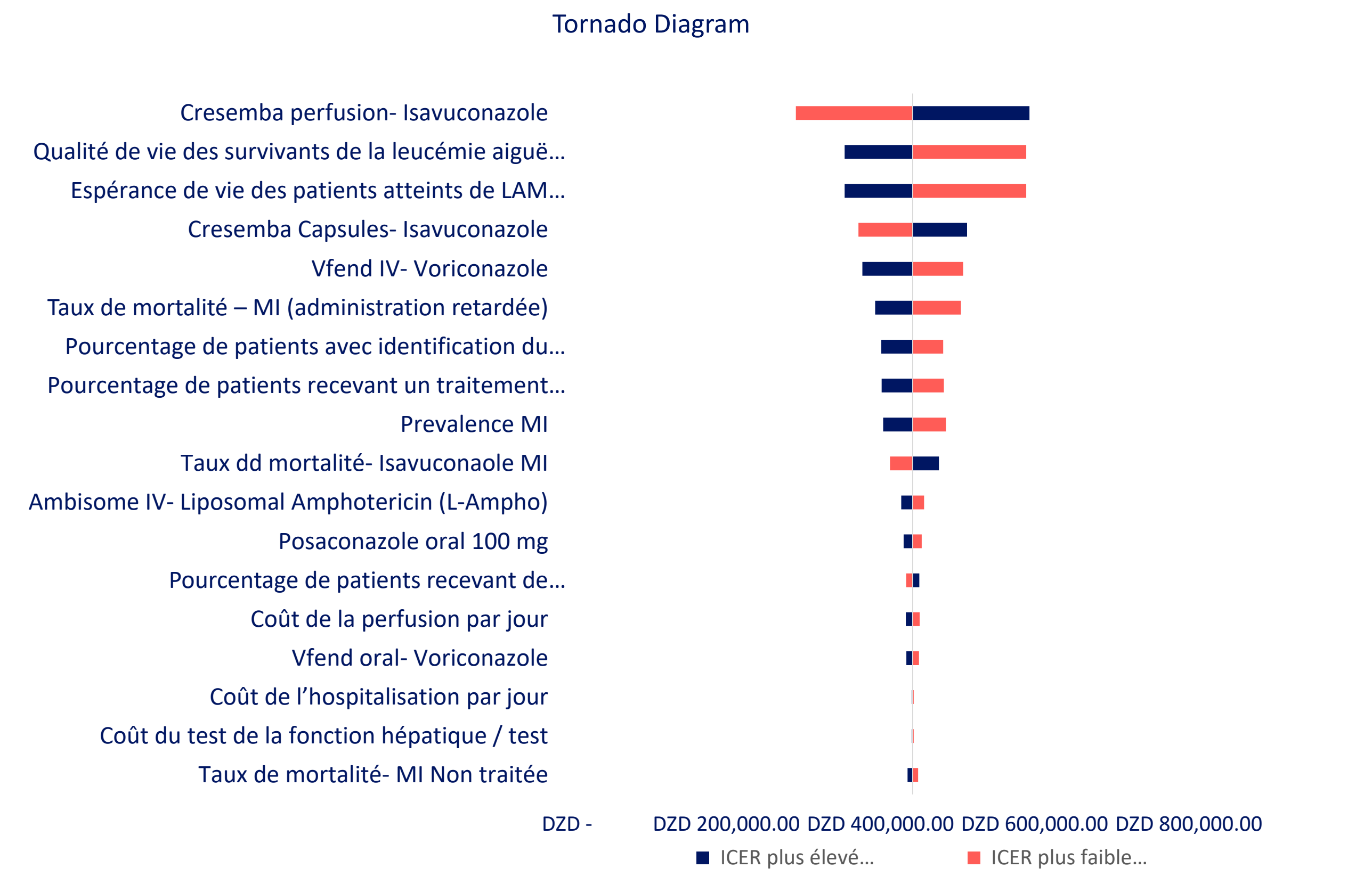
Results

The total cost of Isavuconazole was 9,794.06 USD for IA treatment and 1,238.78 USD for mucormycosis. For voriconazole, the costs were 6,715.01 USD and 1,447.05 USD, respectively. The QALYs gained were 7.18 for Isavuconazole and 6.24 for Voriconazole.

Isavuconazole Versus Voriconazole for the treatment of Invasive Aspergillosis (IA) in Morocco	
Difference in Cost (USD)	USD 2,870.78
Difference in QALYs	0.89
ICER (USD/QALY)	USD 3,225.138
ICER (DZD/QALY)	DZD 441,843.91
Algeria GDP per capita (2024 est.) **	USD 5,631.2
Estimated ICER Threshold (USD/QALY)	USD 5,631.2 – 16,893.6

Exchange Rate (1 USD = 137 DZD)

Model sensitivity was highest to Isavuconazole vial price.



Probabilistic Sensitivity analysis PSA confirmed that Isavuconazole was 80% cost-effective at willingness-to-pay threshold of 6,000 USD/QALY which is below three times the GDP per capita for Algeria.

Conclusion

Isavuconazole is a cost-effective treatment option for IA in Algerian hospital setting. These findings may support its introduction strategy to Algerian market.

**Data and clinical definitions were sourced from published clinical trials and medical guidelines

Medication	Strength	Presentation	Public Price
Vfend™ IV Voriconazole	200mg	1 vial	USD 58.20
Vfend™ oral Voriconazole	200mg	15 tablets	USD 143.77
Ambisome™ IV Liposomal Amphotericin	50mg	1 vial	USD 59.61
Noxafil™ Extended release oral posaconazole	100mg	24 tablets	USD 578.29
Cresemba™ Capsules Isavuconazole	100mg	14 capsules	USD 495.27
Cresemba™ Vial Isavuconazole	200mg	1 vial	USD 297.82

References: 1- Floros L, Kuessner D, Posthumus J, Bagshaw E, Sjölin J. Cost-effectiveness analysis of isavuconazole versus voriconazole for the treatment of patients with possible invasive aspergillosis in Sweden. BMC Infect Dis. 2019 Feb 11;19(1):134. doi: 10.1186/s12879-019-3683-2. PMID: 30744563; PMCID: PMC6371439. 2- **Real GDP per capita (USD) estimate 2023 –Morocco. The World Factbook. Available at: <https://www.cia.gov/the-world-factbook/countries/morocco/> (Accessed: 26 April 2025).