Cost-Effectiveness Analysis of Isavuconazole Versus Liposomal Amphotericin B for the Treatment of Invasive Mucormycosis in Morocco

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A. Maoujoudi, MD, PhD[1], M. Soussi Abdellaoui, MD[2], R. Al-Homsi, Pharm.D[3], N. Alkhatib, PhD[4], A.Aburmilah, M.Sc[3], B. Essaoui, B.Pharm[5], J. Atieh, B.Pharm[3]

[1]Faculty of medicine Mohammed V University rabat Morocco, Rabat, Morocco, [2]CHU Ibn Rochd, Hassan II University of Casablanca, Casablanca,Morocco, [3]Hikma Pharmaceuticals, Amman, Jordan, [4]Path Economics, Amman, Jordan, [5]Hikma Pharmaceuticals, Casablanca, Morocco.

Introduction

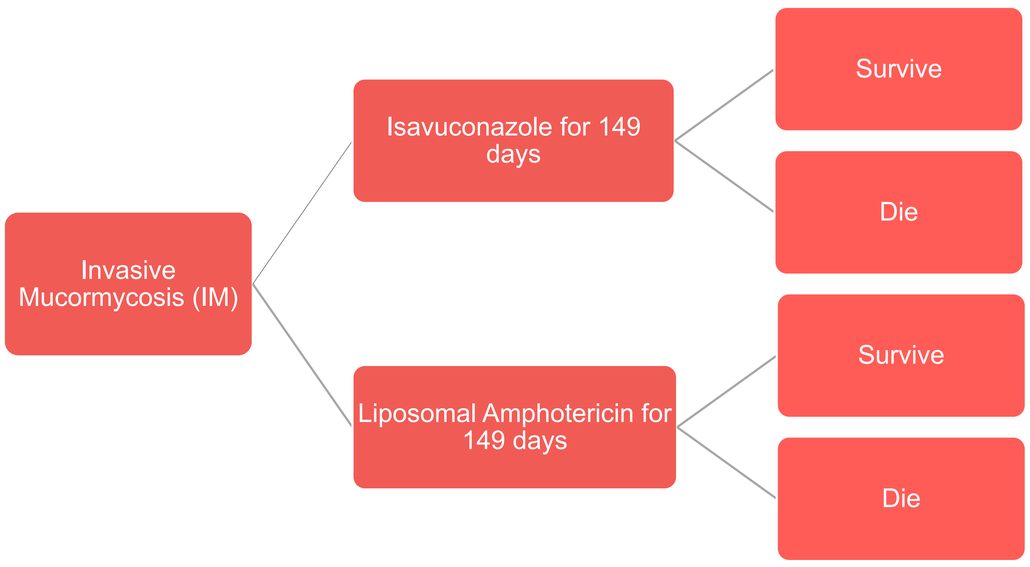
Mucormycosis is a serious opportunistic fungal infection affecting immunocompromised patients, often associated with high mortality and limited treatment options. Amphotericin B-based regimens, typically combined with surgical debridement, remain the most frequently used approach but carry a significant risk of nephrotoxicity.
Isavuconazole has emerged as an alternative option for the primary treatment of mucormycosis, offering comparable efficacy to standard of care with better tolerability.

Objective

This study aims to evaluate the cost-effectiveness of Isavuconazole compared to liposomal amphotericin B for the treatment of mucormycosis in Morocco, from the perspective of a Moroccan healthcare payer.

Method

A cost-utility analysis was conducted using a decision tree model from Moroccan payer perspective.



*Data and clinical definitions were sourced from the VITAL study

Direct medical costs were only considered including the cost of drug acquisition, intravenous administration, laboratory monitoring, and hospitalization.

Medication	Strength	Presentation	Public Price
Ambisome™ IV Liposomal Amphotericin	50mg	1 vial	USD 110.7
Cresemba™ Capsules Isavuconazole	100mg	14 capsules	USD 626.5
Cresemba™ Vial Isavuconazole	200mg	1 vial	USD 383.34

Both deterministic and probabilistic sensitivity analyses (PSA) were performed to test the robustness of model assumptions and parameter uncertainties.

Results

Results were extrapolated to the lifetime horizon of patients with hematological malignancies.

	Cost					Effectiveness	
	Drug	Hospital	Infusion	Monitoring		LYG	QALY
Isavuconazole							
IM	USD 19,813.46	USD 1,029.4	USD 655.12	USD	290.40	7.21	5.91
Total (USD)	USD		21,788.40				
Total (MAD)	MAD		201,578.89				

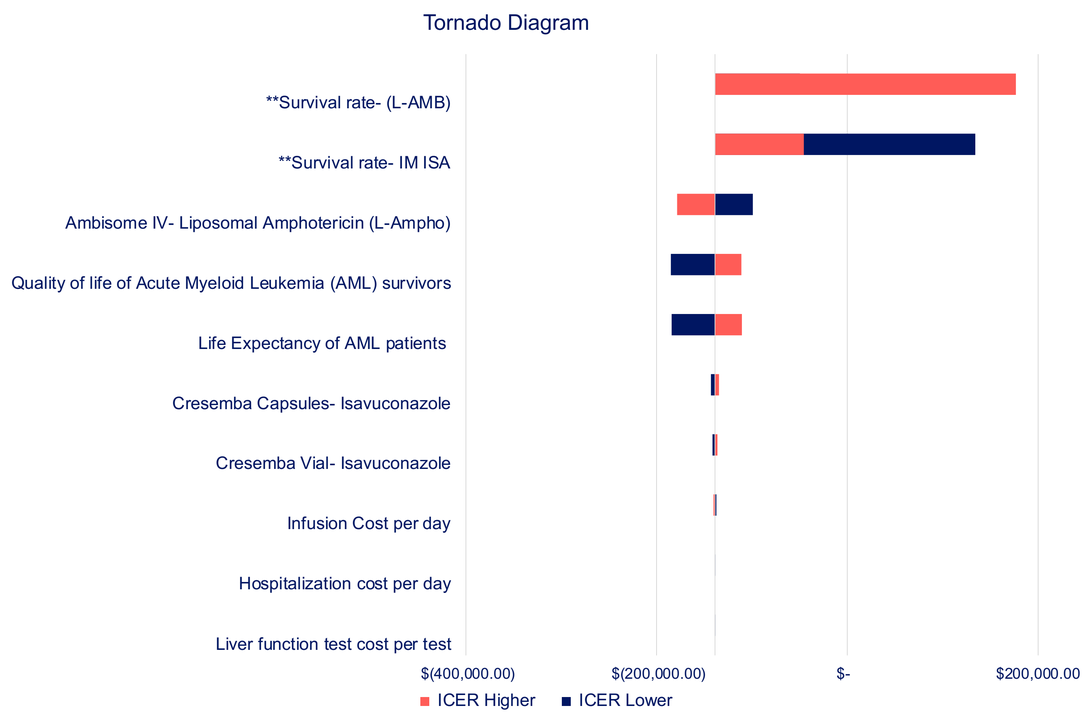
	Cost					Effectiveness	
	Drug	Hospital	Infusion	Monitoring		LYG	QALY
Liposomal Amphotericin							
IM	USD 115,460.1	USD 1,462.8	USD 5,137.5	USD	554.40	6.32	5.18
Total (USD)	USD		122,614.88				
Total (MAD)	MAD		1,134,391.31				

Exchange Rate (1 USD = 9.25 MAD)

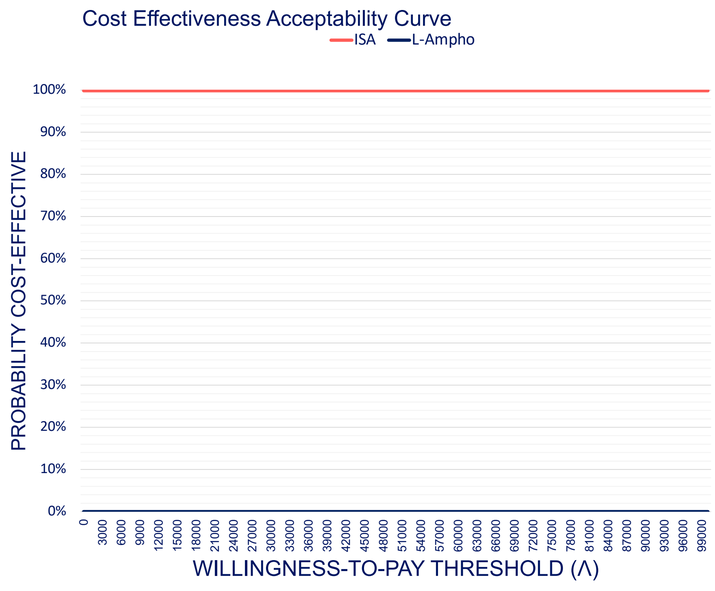
The incremental cost-effectiveness ratio (ICER) for Isavuconazole versus liposomal amphotericin B was dominant -138,843.92 USD per QALY gained.

Isavuconazole Versus L-Ampho for the treatment of Invasive Mucormycosis (IM) in Morocco		
Difference in Cost (USD)	USD	-100,826.48
Difference in QALYs		0.726
ICER (USD/QALY)	USD	-138,843.92
ICER (MAD/QALY)	MAD	-1,284,306.26

Model sensitivity was highest to the price of liposomal Amphotericin vial and survival rates in mucormycosis.



Probabilistic sensitivity analysis confirmed Isavuconazole as 100% cost-effective at zero willingness-to-pay.



Conclusion

Isavuconazole is a cost-effective treatment option for Mucormycosis in Morocco. Our findings may support informed prescribing decisions and more efficient healthcare resources use.

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