

Cost-Effectiveness Analysis of Sacubitril/Valsartan in HFREF Patients in Egypt

Abdelaziz Khalil^{1*}, Gihan Hamdy Elsisy^{2,8}, Mohamed Abdel Meguid Mahdy³, Shady Mansy⁴, Mansour Farouk⁵, Mohamed Selim⁶, Ahmed Nassar⁷

¹Alexandria University, Egypt, ²HEOR Department, HTA Office, Middle East and North Africa, ³Cardiology Department, Faculty of Medicine, Cairo University, Cairo, Egypt, ⁴El Mokattam Hospital, Health Insurance Organization, Cairo, Egypt, ⁵Cardiology Consultant, Health Insurance Organization, Cairo, Egypt, ⁶National heart Institute, Giza, Egypt, ⁷Cardiology Department, Faculty of Medicine, Ain Shams University, Cairo, Egypt, ⁸Economics Department, American University in Cairo, Cairo, Egypt

Introduction:

Heart failure (HF) is a clinical syndrome characterized by a reduction in the function of one or both cardiac ventricles. HF was estimated to affect more than 64 million people globally according to the Global Health Data Registry in 2017, leading to reduced quality of life and functional impairment.

Sacubitril/valsartan is an angiotensin receptor/neprilysin inhibitor (ARNI) that has shown efficacy in HF patients. The aim of this study is to assess the long-term cost and outcomes, considering all direct medical costs of using sacubitril/valsartan compared to enalapril in HFREF patients from the Egyptian healthcare system perspective.

While many published studies economically evaluated sacubitril/valsartan in HFREF patients, this is the first cost-effectiveness study to evaluate the sacubitril/valsartan in HFREF Egyptian patients.

Methodology:

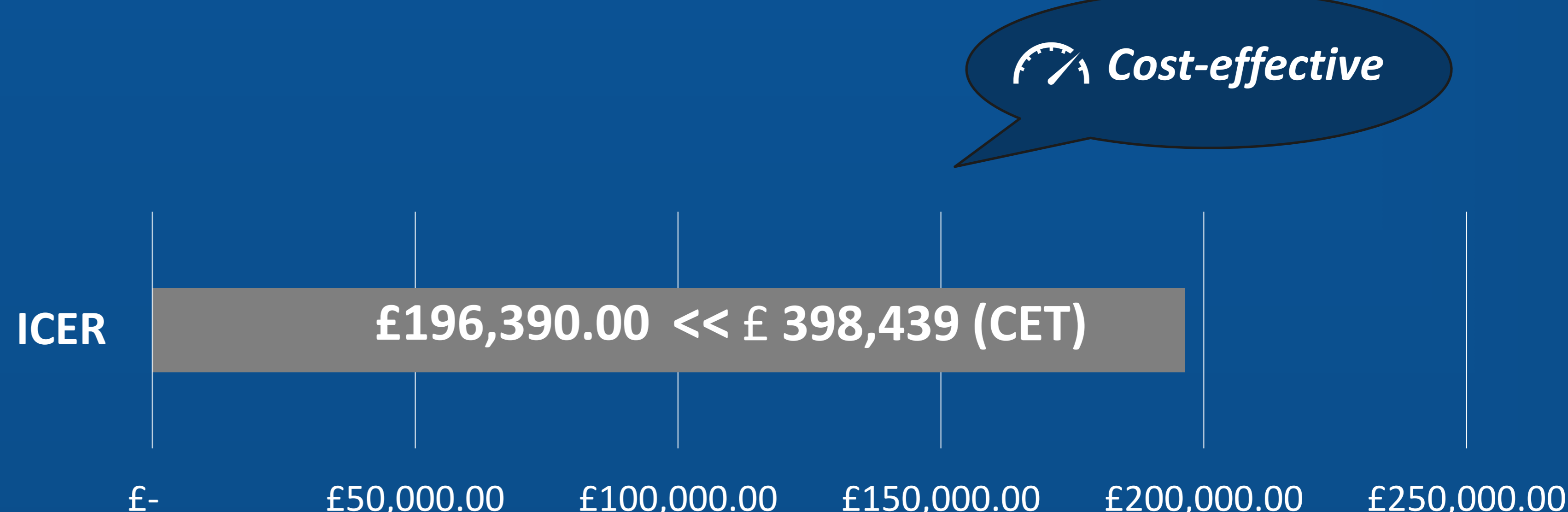
A multi-state Markov model was developed to assess the cost-effectiveness of sacubitril/valsartan vs. ACE-I in the treatment of HFREF population. The model utilizes a one-month cycle length and a half-cycle correction was applied. The model comprises a lifetime horizon. The model captures the relationship between CV mortality and HF hospitalization, representing the time dependency of cardiovascular events. The clinical inputs were captured from the PARADIGM-HF clinical trial, and all costs were derived from the health insurance organization. Input parameters were validated by Expert Panel. Univariate and probabilistic sensitivity analyses were conducted.

Results:

All costs and outcomes of sacubitril/valsartan group and SoC group were measured. Sacubitril/valsartan group generates better outcomes at increased costs, resulting in an incremental cost-effectiveness ratio (ICER) of EGP 196,390 per QALY gained (difference in costs: EGP 105,417; difference in outcomes: 0.54). This ICER remains less than the Egyptian cost-effectiveness threshold (CET)

Conclusion:

Sacubitril/valsartan compared to SoC lead to improved outcomes in HF patients, considered as a cost-effective treatment compared to SoC in HFREF patients and represents as a good value for the patients, caregivers, society, and economy.



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*Address correspondence to:

Abdelaziz Khalil, Pharm B, PGDip
Alexandria University, Alexandria, Egypt
Abdelaziz.ahmed@novartis.com

+2 (010) 05431055

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