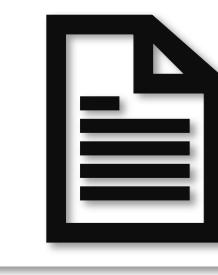


A Cost-Effectiveness Analysis of Ustekinumab Against Vedolizumab Among Inflammatory Bowel Disease Patients with Extra-intestinal Manifestations in Egypt

Mariam Mohammed El-Attar¹, Nageh Louis², Ezzat Ali³, Ahmed Mohammed Seyam⁴, Rania Abdelaziz⁴, Gihan Hamdy Elsisi^{5*}

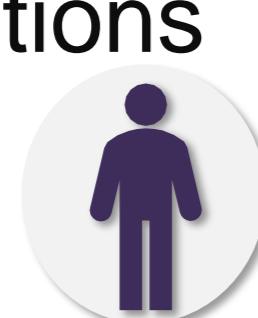
¹ HEOR Department, HTA Office, Middle East and North Africa, Cairo, Egypt, ² Universal Health Insurance Authority, Ismailia, Egypt, ³ Faculty of Medicine, Alexandria University, Alexandria, Egypt, ⁴ Universal Health Insurance Authority, Cairo, Egypt, ⁵ The American University in Cairo, Egypt



BACKGROUND:

Inflammatory Bowel Disease (IBD)—A Chronic Condition

- IBD represents a substantial burden and is associated with long-term complications
- It includes both:
 - Chronic gastrointestinal symptoms
 - Extra-intestinal manifestations (EIMs)



There are limited data comparing the effectiveness of ustekinumab and vedolizumab in managing IBD patients with EIMs in Egypt



OBJECTIVE:

- This cost-utility analysis, conducted from the perspective of the national payer in Egypt, aimed to compare the effectiveness of ustekinumab against vedolizumab in managing EIMs among biologic-experienced IBD patients



METHODOS:

Model approach

- Using a decision tree, patients entered the model and were assigned to either ustekinumab or vedolizumab, followed by transition into mutually exclusive health states

Cost source

- Costs were retrieved from local Egyptian authorities (UPA, UHIA) and are presented in Egyptian Pounds (EGP)

Time horizon

- The analysis was conducted over a one-year time horizon

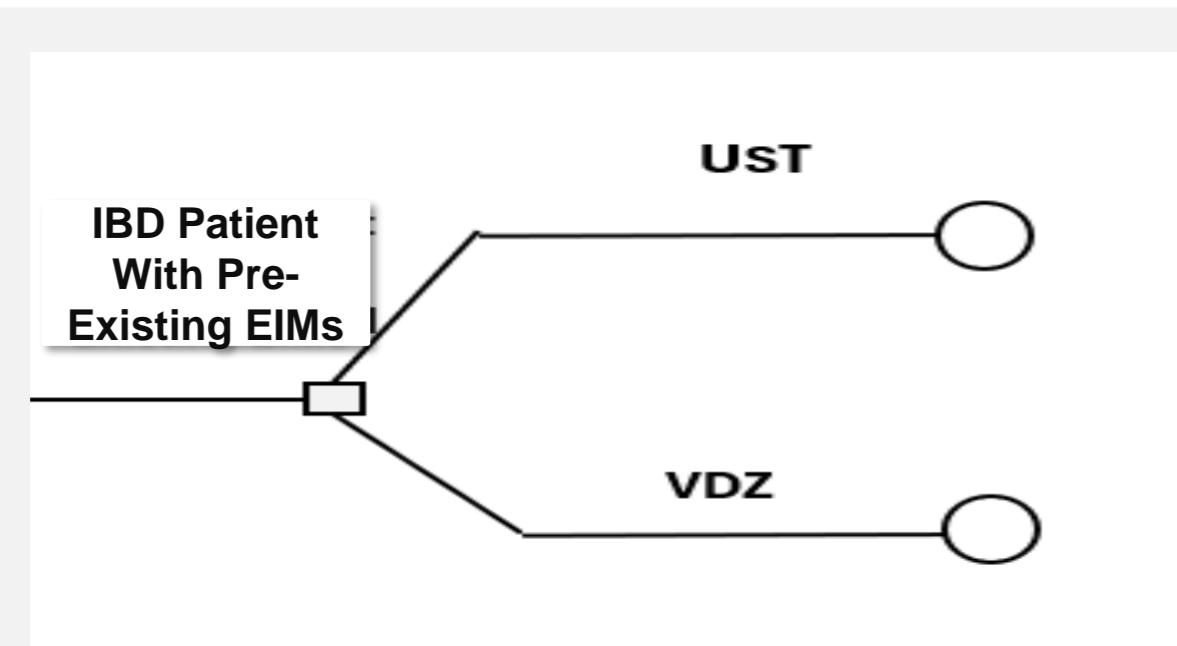


Figure 1. IBD patient with pre-existing EIMs entering the model (UST: Ustekinumab, VDZ: Vedolizumab)

Clinical parameters

- Clinical outcomes for each treatment arm were obtained from a published systematic review and meta-analysis

Cost parameters

- The model included direct medical costs such as drug acquisition, follow-up costs, and additional resources required to manage worsened EIMs

Sensitivity analysis

- A one-way sensitivity analysis assessed model robustness

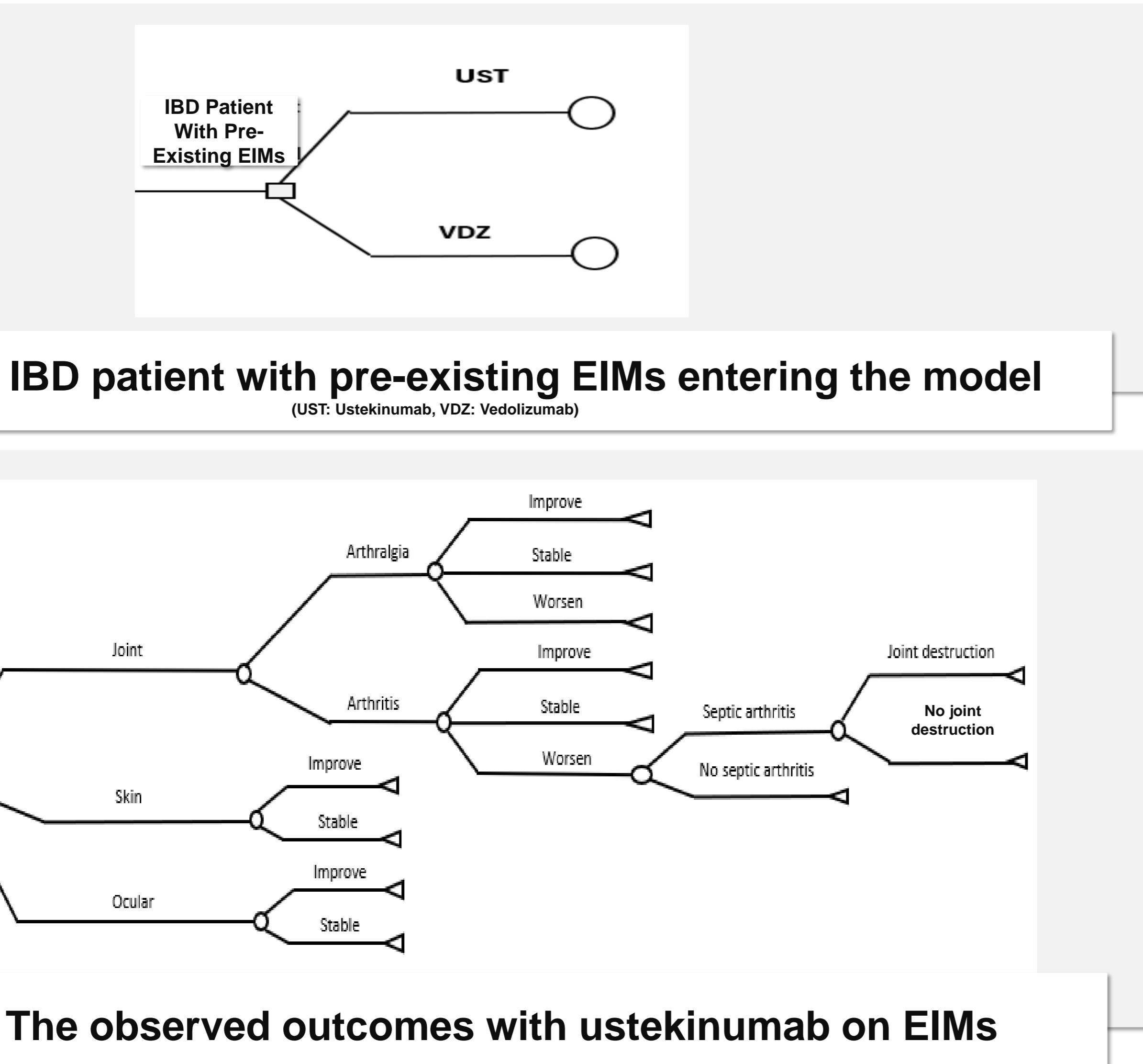


Figure 2. The observed outcomes with ustekinumab on EIMs

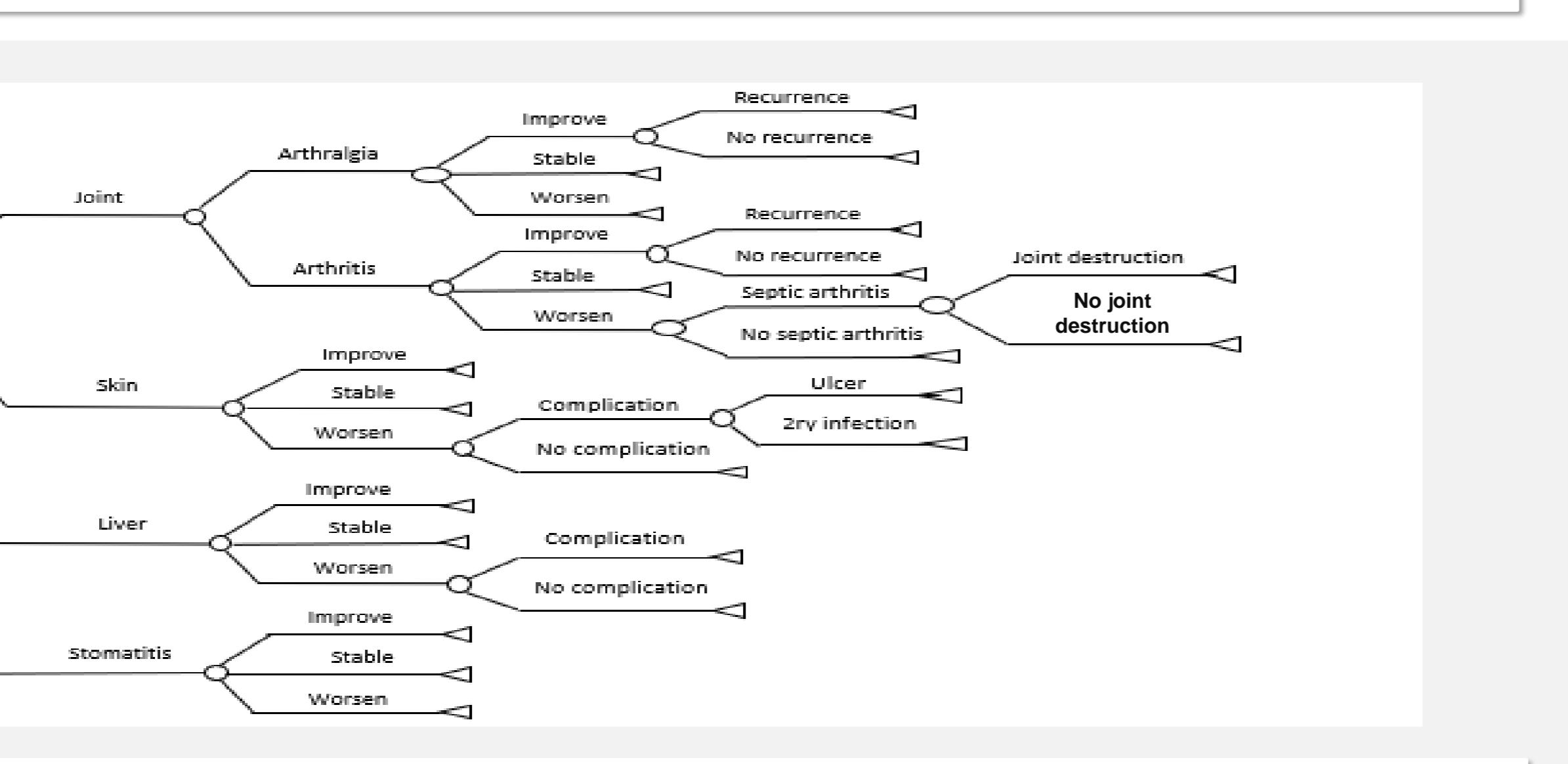
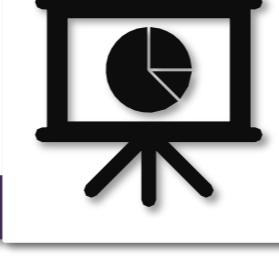


Figure 3. The observed outcomes with vedolizumab on EIMs



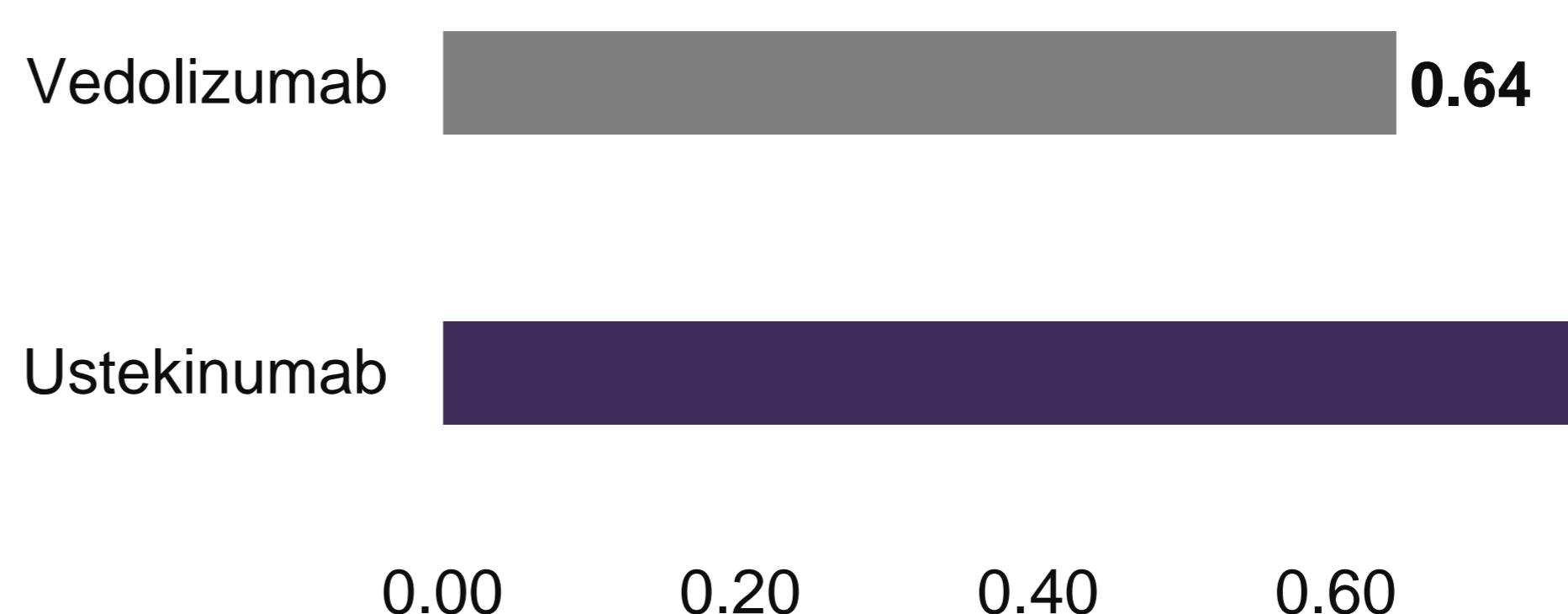
RESULTS:

EGP 200,000
EGP 190,000
EGP 180,000
EGP 170,000
EGP 160,000
EGP 150,000

EGP 188,584
Ustekinumab

EGP 163,907
Vedolizumab

Figure 4. The Total Costs



Ustekinumab generated an incremental QALYs of 0.15

Figure 5. The Total Outcome in Terms of QALYs

- An incremental relative QALY gain (IRQG) of **0.19** corresponds to a cost-effectiveness threshold of two times the GDP per capita (EGP 177,366)

ICER = EGP 167,927 per QALY gained

Ustekinumab offers better outcomes and remains cost-effective compared to vedolizumab

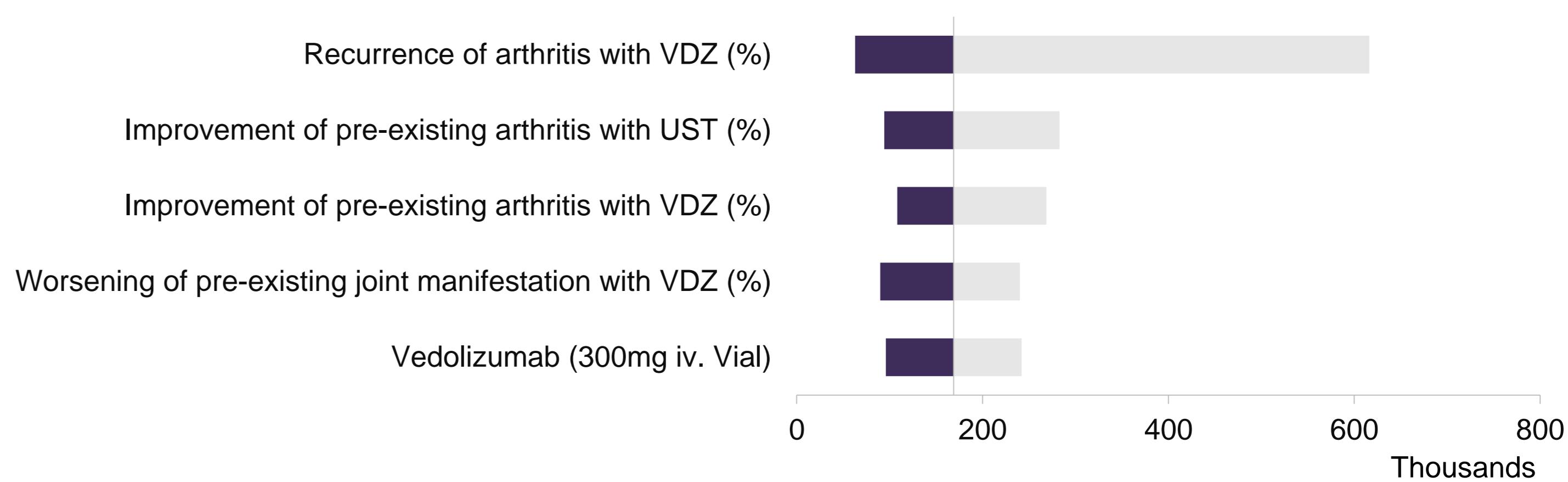


Figure 6. The Tornado Diagram
(The dark color indicates higher values, while the light color indicates lower values)

Discussion:

Strengths:

- The efficacy data was extracted from a systematic review and meta-analysis
- All parameters and assumptions were validated by local Egyptian clinical experts in gastroenterology
- Sensitivity analyses were conducted to assess any uncertainty in the study

Limitations:

- Due to limited local data on the progression of worsened EIMs into complications, we relied on international clinical data, all of which were validated by the local Delphi panel

Conclusion:

- The analysis demonstrated that ustekinumab offers **superior clinical outcomes and QoL improvement** compared to vedolizumab for IBD patients with pre-existing EIMs, while being a **cost-effective option** within the Egyptian healthcare system

*Address correspondence to:

Gihan Hamdy El-sisi, MSc, PhD
Managing Director, HTA Office, Middle East and North Africa
Health Science Policy Council Advisor, ISPOR
Assistant Professor_Health Economics, American University in Cairo
Founder and Former Head of Pharmacoeconomic Unit, CAPA, MoH, Egypt
Health Economics Consultant, World Health Organization EMR Office & USAID
Address:
Business District 4B2, Office 219, Hyde Park, New Cairo Egypt
51 Helmy Hassan Aly St., Mostafa Elnahas, Nasr City, Cairo, Egypt
Al Quoz 1, P.O. Box No. 118962, Dubai, United Arab Emirates
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