

BUDGET IMPACT MODEL OF FEIBA IN THE MANAGEMENT OF HEMOPHILIA PATIENTS WITH INHIBITORS IN THE EGYPTIAN HEALTHCARE SYSTEM

Anan I¹, El-Ekiaby M², Hamdy M³, Elkholy MT³, Afifi R⁴, Adel R⁵, Ibrahim A⁶

¹Accsight, Cairo, C. Egypt, ²Shabrawishi Hospital, Giza, Egypt, ³Cairo University, Cairo, Egypt, ⁴Helwan University, Cairo, Egypt, ⁵Takeda, Cairo, Egypt, ⁶Accsight, Dubai, United Arab Emirates



ABSTRACT

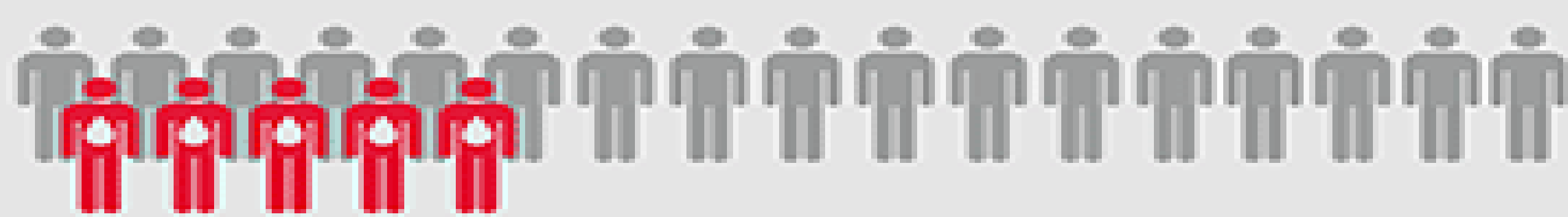
OBJECTIVES: With 5,050 Egyptians living with hemophilia (2013), the standard of care management is still on-demand with Recombinant activated factor VII (rFVIIa, eptacog alfa activated), the objective of the analysis is to calculate the budget impact of introducing the anti-Inhibitor coagulant complex (FEIBA) to the public sector formulary in Egypt, for the treatment of acute bleeding episodes and for surgery coverage in patients with hemophilia with inhibitors.

METHODS: An Excel based budget impact model was designed measuring the impact of using Feiba in controlling the bleeding episodes of Hemophilia patients with inhibitors in On-demand setting and in pre-operative management. The model accounted only for direct medical costs including the acquisition price of medications; Feiba and eptacog alfa, bleed management costs and costs of pre and post operations use of medications. Clinical approach in bleed control and pre-operative management was captured through local experts opinion. The model was built over a 5-year time horizon with an increased uptake of Feiba over time. One way sensitivity analysis was run to evaluate the robustness of the outcome.

RESULTS: The model was run on an estimated prevalence of 1,236 hemophilia patients with inhibitors in the first year and considered the disease incidence over 5 years. In the base case scenario of the model, including both adults and pediatrics populations, Feiba showed an estimated total saving of 5,571,386,296 EGP (296,918,055 USD) over the 5 years, compared to the current use of eptacog alfa. This saving is mainly attributed to the lower dosage and frequency needed by Feiba in bleed control and preoperative management.

CONCLUSION: Despite its higher acquisition price, Feiba adoption would result in a significant budget saving compared to the current standard of care. The results of this model would inform decision makers for efficient resources allocation in the field of Hemophilia care in Egypt.

INTRODUCTION



The global estimated incidence of hemophilia is around **1 in 5,000 Male Births**

The number of people worldwide living with hemophilia is about 400,000¹. Due to its X-linked inheritance pattern, geographical areas with a higher frequency of consanguineous marriages like Egypt have a higher prevalence of the disease².

Bleeding episodes are the hallmark of hemophilia, and their extent depends on the severity of the disease and the presence/absence of neutralizing anti-factor VIII antibodies, known as inhibitors³. These complications will lead to high economic burden as well as severe loss of function due to loss of motion, pain, deformity and activity limitation, affecting patients' quality of life, psychological well-being and thus productivity⁴.

OBJECTIVES

To measure the financial impact of adopting Feiba in controlling bleeding episodes of hemophilia patients with inhibitors replacing the current standard of care, eptacog alfa, within the public sector in Egypt.

METHODOLOGY



Excel sheet-based budget impact model was developed comparing the bleeding Control costs in addition to pre and post operative management costs management costs between Feiba

and eptacog alfa from payor perspective whilst considering different uptake scenarios in the treatments share on both medications within the public sector in Egypt.

The target population of our study are hemophilia patients with inhibitors. Population was estimated combining global disease prevalence and incidence and the World Federation of Hemophilia (WFH) 2020 annual report projected to Egyptian male population and male birth rate.

Variable	Value	Source
Male Population	53,744,841	World population review
Hemophilia Incidence	1/5000	PMID: 31499529
Patients with Inhibitors	11%	WFH 2020 Report
Weighted Average Weight	51.3	Accsight Databank
Mean Annualized bleeding rate	38	Experts Opinion
Eptacog alfa Bleed Control Dosing	1,145 IU/Kg	Experts Opinion
Feiba Bleed Control Dosing	533 IU/Kg	Experts Opinion

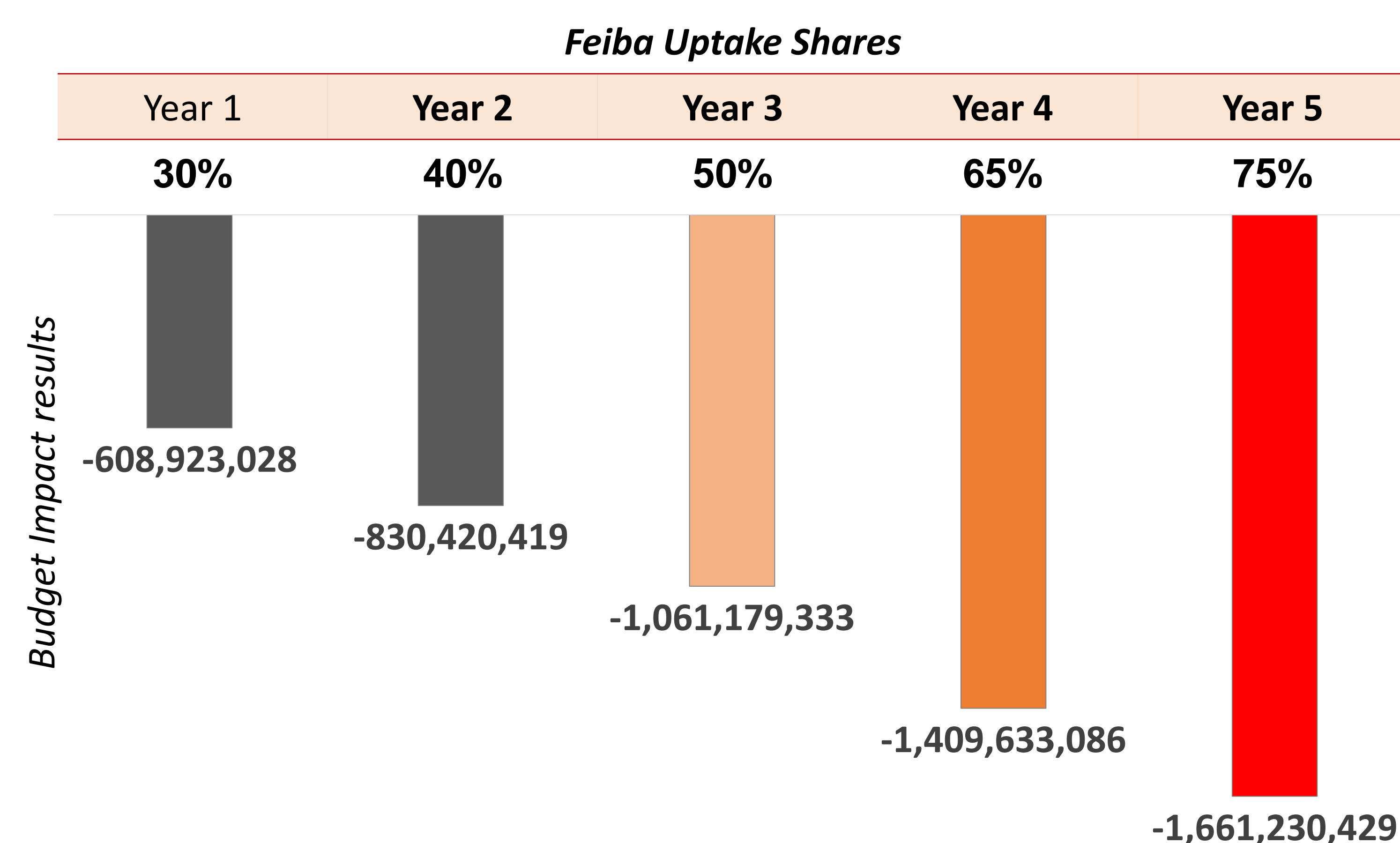
Treatments' efficacy of Feiba and eptacog alfa, were considered similar, hence clinical outcomes were not modelled.

Bleeding rate, and on-demand bleeding control schemes for different bleeding types as well as pre and post operative management were provided through local experts' opinion.

Treatments acquisition price were collected from payor price list, Feiba price and the estimated uptake in the Egyptian market was provided by Takeda Egypt.

We conducted a series of scenario analyses and one-way sensitivity analyses to evaluate the influence of the uncertainty and variability of the parameters used in the model on the results.

RESULTS



5.5 Billion EGPs in Savings over 5 years



Equivalent to **860k EGPs Per Patient Per Year**

CONCLUSION

Despite its higher acquisition price, Feiba adoption would result in a significant budget saving compared to the current standard of care. The results of this model would inform decision makers for efficient resources allocation in the field of Hemophilia care in Egypt.