EE302

Cost-Utility Analysis of Eptinezumab versus Erenumab for Episodic Migraine Headaches in the United States

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INTRODUCTION

Migraine headache is one of the most prevalent neurological disorders in the United States (US) and is the second largest cause of disability worldwide.[1]

Migraine is a neurological disorder associated with severe headaches lasting 4 to 72 hours accompanied by nausea and/or light and sound sensitivity.[2]

Episodic migraine (EM) is defined as experiencing less than 15 migraine days per month.[2]

Eptinezumab is an FDA approved monoclonal antibody that binds to calcitonin-gene related peptides (CGRP) ligands approved for migraine prevention in 2020.[3]

According to the clinical trials, eptinezumab is able to reduce monthly migraine frequency significantly in both episodic migraine (EM) and chronic migraine (CM) patients with mild adverse effects.[3,4]

OBJECTIVES

To evaluate the cost-effectiveness of eptinezumab as a preventive treatment for migraines in patients with episodic migraine (EM)

METHODS

A hybrid decision-Markov model was constructed to assess the cost-effectiveness of eptinezumab as a preventive treatment for migraines compared to erenumab among EM patients from the US healthcare payer's perspective.

Eptinezumab price was based on Veteran Affairs (VA) BIG4 pricing, erenumab price was based on VA National Contract pricing

Probabilities and utility scores were based on published literature

Total costs, quality-adjusted life years (QALYs), and incremental cost-effectiveness ratio (ICER) were calculated, and a probabilistic sensitivity analysis (PSA) was performed

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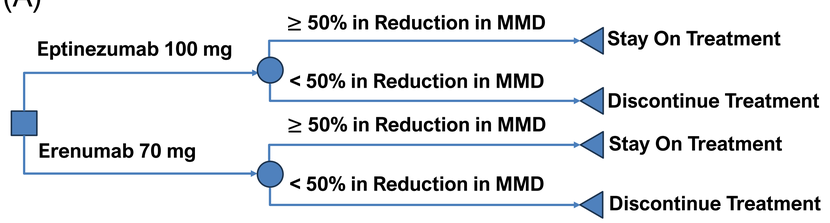
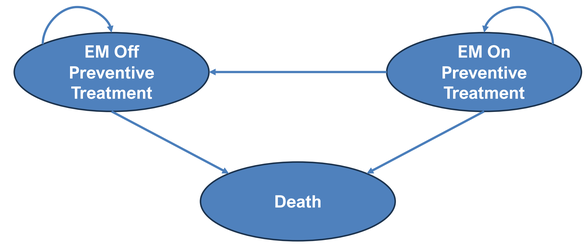
METHODS (Cont'd)

Figure 1. Model schema of eptinezumab and erenumab in patients who failed prior preventive therapies. (A) The decision tree model simulates the patient's MMD for six months after therapy initiation (B) Markov model schema

(A)



(B)

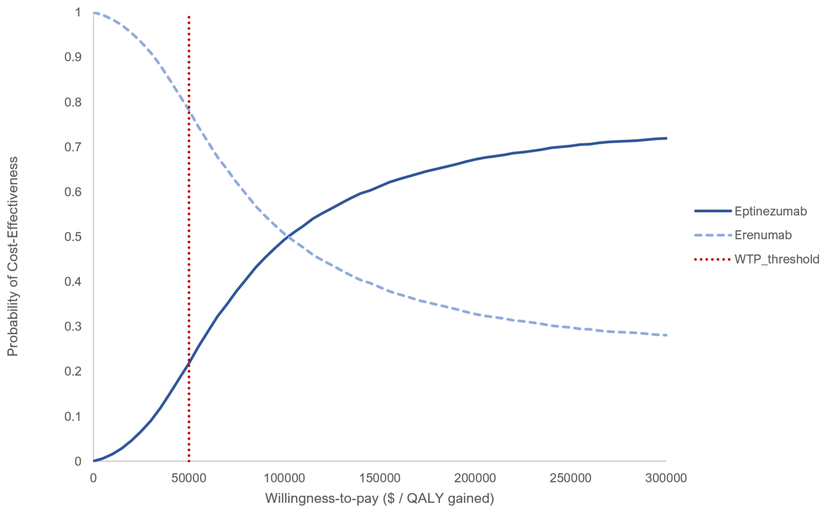


RESULTS

Table 1. Deterministic base-case results

Strategy	Total Costs ($)	Total QALYs	Incremental Costs ($)	Incremental QALYs	ICER
Eptinezumab	36,282	5.99	21,080	0.10	210,800
Erenumab	15,202	5.89			

Figure 2. Cost-effectiveness acceptability curve



DISCUSSION

Eptinezumab had higher QALYs and higher costs compared to erenumab (ICER of $210K per additional QALY gained)

Eptinezumab is not cost-effective at a WTP of $50K per QALY gained

In order for eptinezumab to be cost-effective at a WTP threshold of $50K per QALY gained, eptinezumab needs to have a cost of $70 per month

In the PSA, eptinezumab was more cost-effective when WTP >$105K per additional QALY gained

CONCLUSIONS

Eptinezumab was cost-effective at a WTP threshold that was greater than $105K per additional QALY gained

Policymakers deciding whether to pay for either eptinezumab or erenumab may want to consider other factors, such as the route of administration

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