Cost-Effectiveness of Lecanemab in Patients With Early Alzheimer's Disease in Saudi Arabia

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KEY LEARNINGS

Lecanemab demonstrated superior health outcomes for patients with early Alzheimer's disease.

BACKGROUND

- Alzheimer's disease (AD) is a progressive neurodegenerative disorder characterized by amyloid-β accumulation and neurofibrillary tangles composed of hyperphosphorylated tau Protein . These pathological changes begin years before clinical symptoms emerge. (1,2)
- Conventional therapies, including cholinesterase inhibitors and memantine, primarily manage symptoms rather than the underlying disease pathology. Disease-modifying treatment offers an opportunity to intervene during early AD, before more advanced cognitive and functional impairment develops. (3,4)
- Lecanemab is an anti-amyloid monoclonal antibody that targets underlying amyloid pathology and has demonstrated slowing of cognitive and functional decline in early AD .(4)
- In Saudi Arabia, conventional management of AD includes symptomatic therapies, such as cholinesterase inhibitors and memantine, alongside supportive care. Lecanemab may represent a cost-effective option.

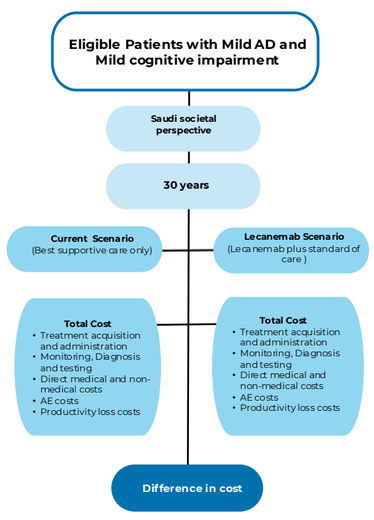
OBJECTIVE

- To evaluate the cost-effectiveness of lecanemab plus standard of care (SoC) versus best supportive care (BSC) in adults with early Alzheimer's disease (AD)—mild cognitive impairment or mild dementia due to AD—with confirmed amyloid pathology and zero or one APOE4 allele, using cost-effectiveness model from a societal perspective in Saudi Arabia.

METHODS

- A global Excel-based Markov cohort model was adapted to Saudi Arabia to compare lecanemab plus SoC with SoC alone over a 30-year time horizon, from a societal perspective. Costs and health outcomes were discounted at 3.5% annually.
- The model's data were sourced from Clarity AD trial, local experts, medical databases, and the national drug list.
- Input parameters included Transition probabilities were driven from published Clarity AD trial evidence and validated by local experts, and Localized inputs included lecanemab acquisition, administration and monitoring, amyloid-related imaging abnormalities management, diagnosis and confirmatory testing, disease severity-dependent healthcare resource use, non-medical and informal care, and productivity losses.
- The eligible population over 30 years was estimated from Clarity AD trial.
- The model compared the cost effectiveness for patients who receive SoC and for others who receive lecanemab.
- To account for uncertainty, probabilistic sensitivity analysis (PSA) was conducted, alongside univariate and scenario sensitivity analyses.

Figure 1. | Model structure



RESULTS

1. In base-case cost-effectiveness results ,total discounted costs were higher with lecanemab than with best supportive care (BSC) (USD 255,098 versus USD 173,347), yielding an incremental cost of USD 81,750 (Figure 2).
2. Lecanemab yielded greater health benefits than best supportive care (BSC), generating 17.05 versus 14.63 QALYs, corresponding to an incremental gain of 2.42 QALYs (Figure 3).
3. The base-case analysis yielded an incremental cost-effectiveness ratio (ICER) of USD 33,811 per QALY gained, below the willingness-to-pay threshold applied in the Saudi Arabian setting.
4. Tornado diagram of univariate sensitivity analysis is presented in(Figure 4).

Figure 2. | Base-case cost-effectiveness total discounted costs

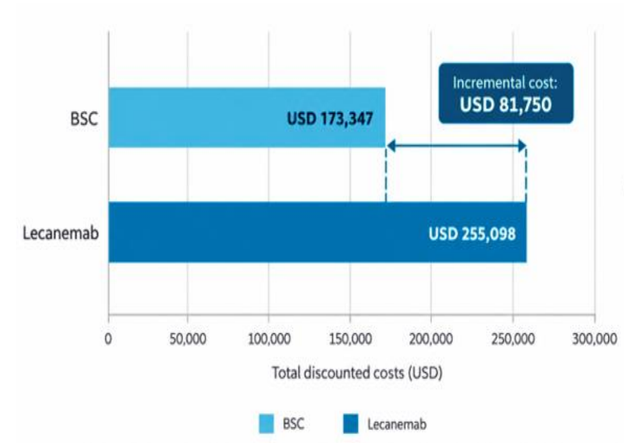


Figure 3. | Base-case cost-effectiveness total QALYs

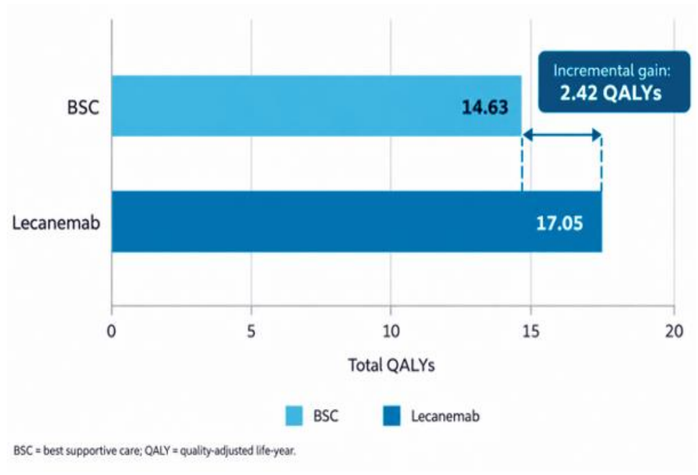
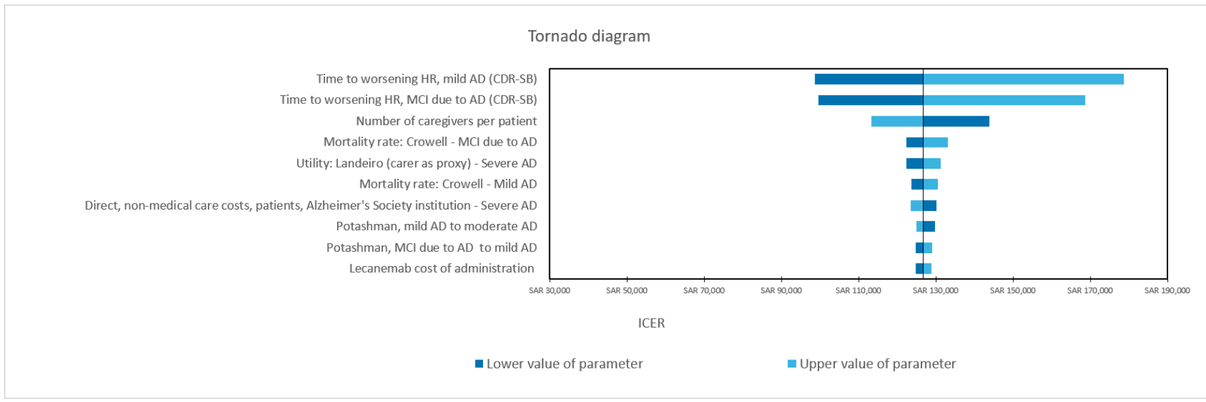


Figure 4. | Tornado diagram of univariate sensitivity analysis



CONCLUSIONS

- Lecanemab was associated with improved health outcomes and delayed disease progression in patients with early Alzheimer's disease, with an incremental cost-effectiveness ratio considered acceptable under the applied Saudi societal willingness-to-pay threshold. These findings support consideration of lecanemab for reimbursement and underscore the need for robust local data to strengthen the evidence base and inform decision-making.

References

1. Jack, C. R., Jr, Knopman, D. S., Jagust, W. J., Petersen, R. C., Weiner, M. W., Aisen, P. S., Shaw, L. M., Vemuri, P., Wiste, H. J., Weigand, S. D., Lesnick, T. G., Pankratz, V. S., Donohue, M. C., & Trojanowski, J. Q. (2013). Tracking pathophysiological processes in Alzheimer's disease: an updated hypothetical model of dynamic biomarkers. The Lancet. Neurology, 12(2), 207–216. https://doi.org/10.1016/S1474-4422(12)70291-0
2. Scheltens, P., Blennow, K., Breteler, M. M. B., de Strooper, B., Frisoni, G. B., Salloway, S., & Van der Flier, W. M. (2016). Alzheimer's disease. The Lancet, 388(10043), 505–517. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)01124-1/abstract
3. National Institute on Aging. (2023, September 12). How is Alzheimer's disease treated? National Institutes of Health. https://www.nia.nih.gov/health/alzheimers-treatment/how-alzheimers-disease-treated
4. National Institute on Aging. (2023, July 7). FDA converts novel Alzheimer's disease treatment to traditional approval. https://www.nia.nih.gov/news/fda-converts-novel-alzheimers-disease-

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