HTA45

Assessing the Cost-Effectiveness of Lecanemab for Early Alzheimer's Disease Treatment: A Swiss Perspective

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Background

Alzheimer's disease (AD) is the leading cause of dementia, accounting for 40–75% of cases worldwide (1). In Switzerland, its growing prevalence with population aging increases healthcare and societal burdens (2,3). The anti-amyloid therapy lecanemab marks a major advance, targeting AD pathology in early stages (mild cognitive impairment or mild dementia with confirmed Aβ pathology) rather than symptoms (4–6). Assessing its cost-effectiveness is vital to capture its full health-economic value. However, the Swiss pricing algorithm impedes adoption, as it requires comparable cost-effectiveness benchmarks and focuses narrowly on drug costs without accounting for broader healthcare expenditures or incorporating societal cost-benefit considerations. By neglecting broader healthcare and societal benefits, the system often yields suboptimal outcomes, leaving breakthrough therapies like lecanemab doubly disadvantaged.

Objective

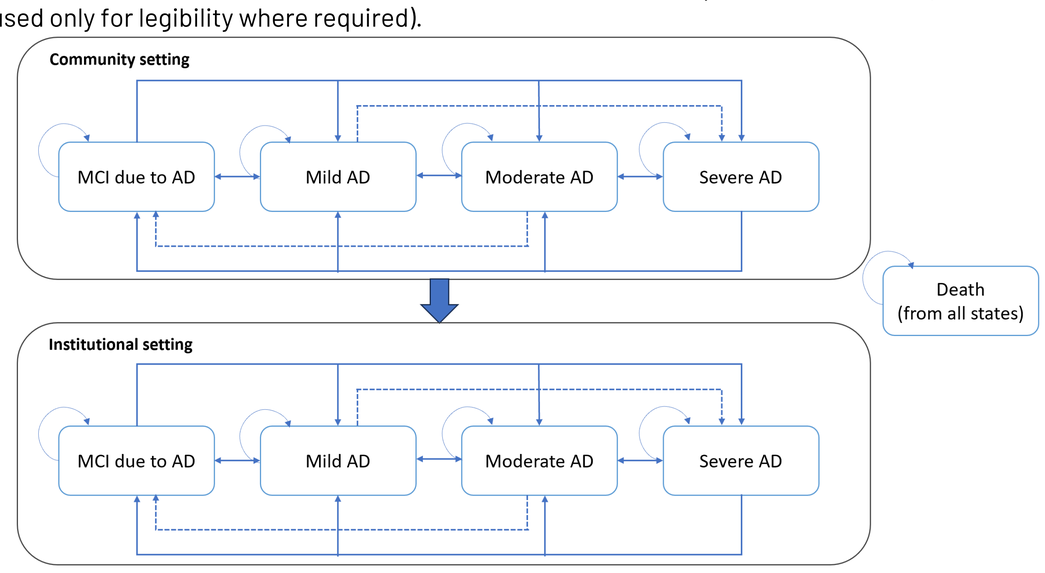
To estimate the cost-utility of lecanemab + standard of care (SoC; acetylcholinesterase inhibitors, memantine and/or non-pharmacological interventions) versus SoC alone in early AD from the societal perspective in Switzerland.

Methods

A Markov model evaluated the lifetime cost-effectiveness of lecanemab + SoC vs SoC alone in early AD with 0–1 APOE4 alleles. Efficacy was based on the Phase III Clarity AD trial. Costs, mortality, and clinical inputs were sourced from publicly available data. A lifetime horizon with a 3.5% annual discount rate for costs and outcome and the Swiss societal perspective (including medical, productivity, and informal care costs) was applied. Caregiver utility was included to capture carer quality-of-life effects. Costs were based on Swiss data where available; otherwise, UK costs were PPP-adjusted (OECD), inflated to 2024, and converted to CHF using the 2024 rate.

Model structure: The model simulated nine health states (disease severity, care setting, death), with patients entering in the MCI or Mild AD health states and transitioning between states or to death.

Figure 1: Model structure. Dashed and solid lines are both used to denote possible transitions (dashed lines are used only for legibility where required).



Framework: The methods of the economic evaluation are summarized in the table below using the PICOSTEPS framework (7).

Table 1. Summary of evaluation framework.

PICOSTEPS (7)	Input
Patients /population	Adult patients with early AD + confirmed Aβ pathology and 0–1 APOE4 alleles.
Intervention and comparator	Lecanemab + SoC vs SoC.
Outcomes	ICER (CHF/QALY), total and disaggregated costs, QALYs (patient/caregiver), life years, mean/median time in AD stages, and time in community vs institutional care.
Setting	1 month cycle length, years to begin 1.5 using natural history.
Time	30 years from a mean starting age of 71.8. 3.5% for costs and outcomes. All-cause treatment discontinuation and stopping at moderate/severe AD.
Effects	Treatment effect: Combined HR for disease progression: 0.698 for all transitions; post moderate/severe AD.
Perspective	The analysis uses a Swiss societal perspective, including direct and indirect costs (healthcare, social care, productivity losses) and caregiver burden (1.8 caregivers per patient; additive utility), capturing the full health economic impact of AD.
Sensitive analysis	A probabilistic sensitivity analysis (PSA) with 1,000 Monte Carlo simulations varied all parameters jointly, while a one-way sensitivity analysis (OWSA) varied each parameter within its 95% CI (±20% if unknown) to assess uncertainties.
Validation	Internal, cross, and external validation.

Results

Incremental cost-effectiveness ratio (ICER): CHF 20,108 per quality adjusted life years (QALY) which is well below Switzerland's per capita GDP of $ 111,000 and the widely cited cost-effectiveness threshold of CHF 100,000/QALY (e.g.: (8,9)).

Life years (LYs) and QALYs: Lecanemab slows AD progression, delaying dementia by 1.3 years, increasing time in early AD (+1.4 LYs), reducing time in severe AD (–0.78 LYs), lowering time in institutional care, and increasing community care time (+1.39 LYs), leading to a 0.82-year survival gain and an additional 2.28 QALYs vs SoC.

Costs: Costs associated with lecanemab (acquisition, administration, monitoring) are partially offset by lower direct medical (–CHF 1,266) and non-medical care costs (–CHF 14,351) compared with SoC.

Validation: Internal, cross, and external checks confirmed model accuracy, including formula audits, logic tests, and key section reconstructions.

Table 2. Cost-effectiveness analysis results

Comparator	SoC	Lecanemab	Incremental
Total costs	CHF 625,239	CHF 671,178	CHF 45,939
Total QALYs	16.64	18.92	2.28
ICER	-	-	CHF 20,108

PSA: Lecanemab is cost-effective at a WTP threshold of CHF 100,000/QALY (ICER: CHF 19,962). The mean probabilistic ICER was consistent with the deterministic ICER, indicating that the analyses are robust despite uncertainty in the input parameters.

Figure 2: Cost effectiveness-plane

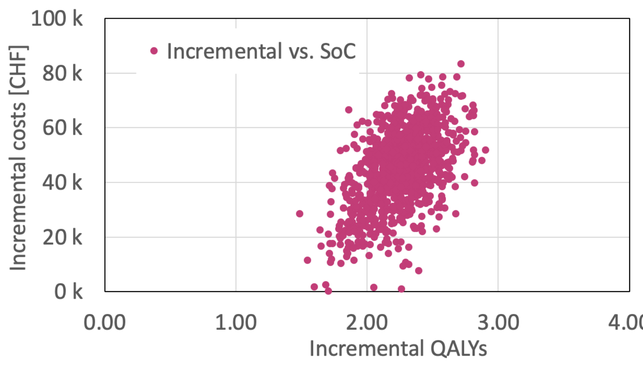
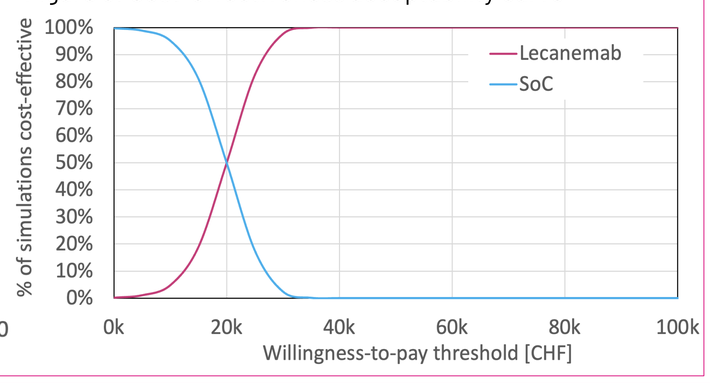
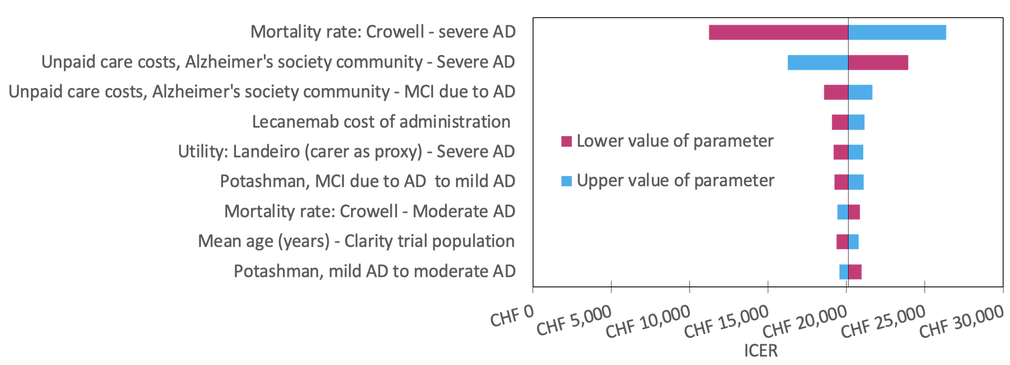


Figure 3: Cost-effectiveness acceptability curve



OWSA: Key drivers were the mortality rate in severe AD and unpaid care costs (moderate AD); the top 10 parameters moderately affected the ICER (CHF 11,225–26,364).

Figure 4: Tornado diagram



Conclusion

Lecanemab represents a potentially cost-effective option for the treatment of early AD from the Swiss healthcare system and societal perspective. Delaying AD progression with lecanemab potentially improves health outcomes of AD patients and their caregivers. This cost-effectiveness analysis of lecanemab demonstrates economic value of a new treatment for which a traditional Swiss assessment that uses internal reference pricing may not be suitable.

If you have any questions about this poster, please email or call Eisai Medical Information at ESI_Medinfo@eisai.com or 888-274-2378

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