TITLE (max 170 characters)

Are anti-amyloid treatments for Alzheimer's disease ready for practice? Long-term effectiveness and cost-effectiveness in Europe

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ABSTRACT (max 300 words)

INTRODUCTION:

Recent trials on anti-amyloid treatment for early Alzheimer's disease (AD) have shown significant effects on symptoms, albeit below what some consider clinically meaningful, with potential for adverse events. Potential high drug prices raise questions regarding budget impact, likely competing with alternative care and support for people with dementia. Cost-effectiveness estimates are available for the US but lacking for Europe, hindering preparations for these treatments. We aim to estimate the cost-effectiveness of anti-amyloid treatment for early AD in Europe.

METHODS:

We developed an open-source health-economic decision model to simulate the lifetime health-economic effects of lecanemab anti-amyloid treatment on reducing disease progression in people with a diagnosis of mild cognitive impairment or mild dementia with abnormal amyloid. Treatment effect was 31% reduction in risk of transition to (a more severe state of) dementia at current US list price of €24,000 per year continued through moderate dementia. Quality of life

and care use across 5 European regions were used. The model is freely available at https://github.com/ronhandels/ipecad.

RESULTS:

Anti-amyloid treatment resulted in mean per-person lifetime quality-adjusted life year (QALY) gains (range over 5 regions 0.33-0.39) and care costs/savings (range €-146 to 7,864) at additional diagnostic and drug costs (€113,000). Incremental cost-effectiveness ratios (ICER) ranged from €277,000 to 309,000 per QALY gained. Headroom analysis indicated treatment was potentially cost-effective across regions at €7,495-9,800 per year. Scenarios of stopping earlier after 24 months without and with assumed sustained treatment effect and treatment effect waning of 10% per year indicated uncertainty (ICER ranged €78,188-433,357 per QALY gained).

DISCUSSION:

Anti-amyloid treatment lecanemab for early AD at the current US price exceeds common willingness-to-pay thresholds in Europe. We recommend efficient early AD identification, lower price, and performance-based payment, along with research on cost-effective AD subtypes using current trial data, for anti-amyloid treatment to reach cost-effectiveness thresholds in Europe.