



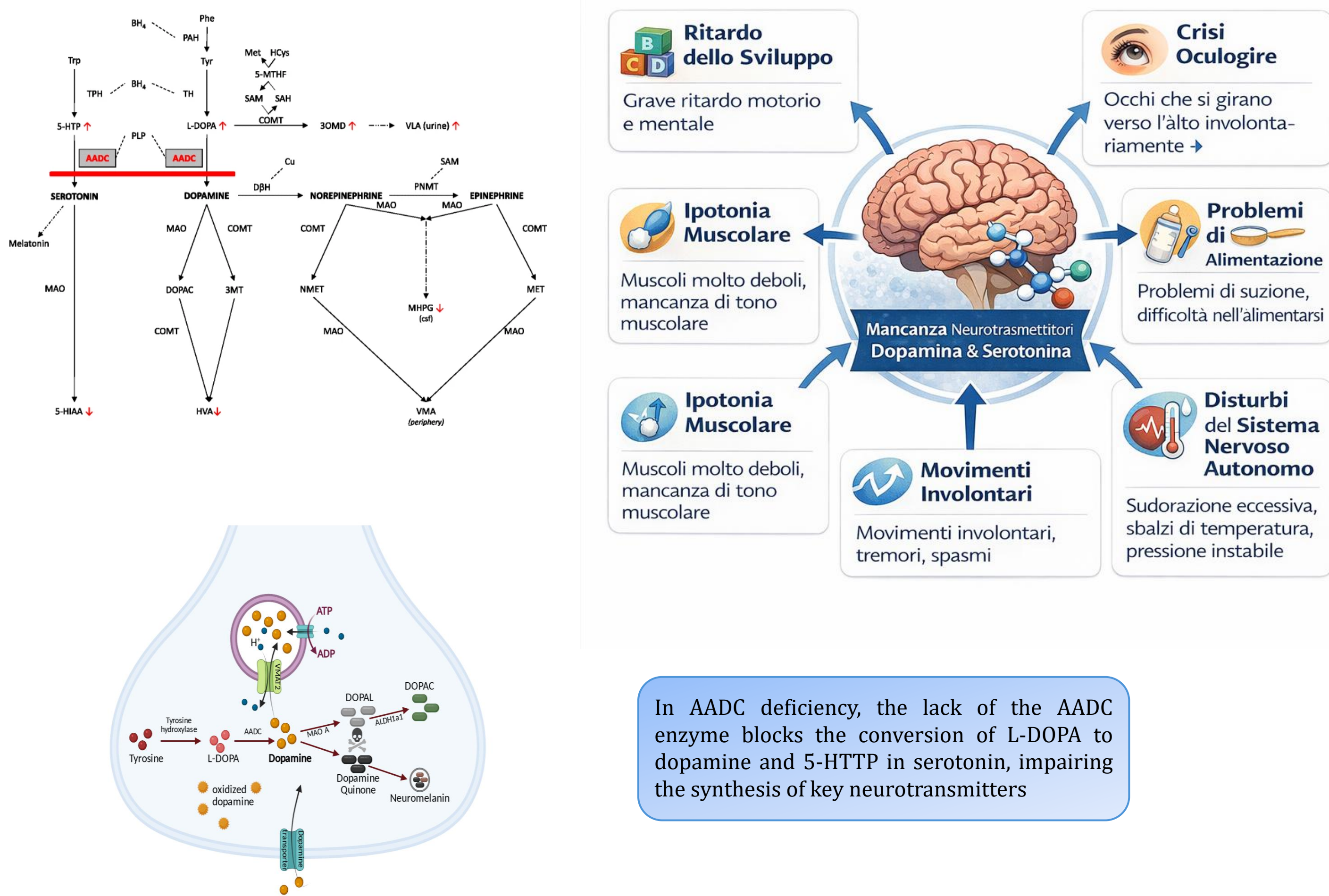
CLINICAL EFFECTIVENESS, QUALITY OF LIFE AND ECONOMIC IMPACT OF ELADOCAGENE EXUPARVOVEC IN AROMATIC L-AMINO ACID DECARBOXYLASE DEFICIENCY: A TARGETED EVIDENCE SYNTHESIS

N. PERROTTA¹, L.A. FIORITO¹, G. CASINI¹, A. COLUCCIA¹, G. CENTIONI¹, C. SCOPETTI¹, G. POLITO¹.

POLICLINICO UMBERTO I, UNIVERSITY HOSPITAL, PHARMACY UNIT, ROME, ITALY

BACKGROUND AND IMPORTANCE

Aromatic L-amino acid decarboxylase deficiency (AADC deficiency) causes severe motor impairment, oculogyric crises and high care needs. Eladocagene exuparvovec (EL-EX) is an intracerebral AAV2 gene therapy for patients ≥ 18 months; long-term benefit and economic impact remain crucial for hospital practice.

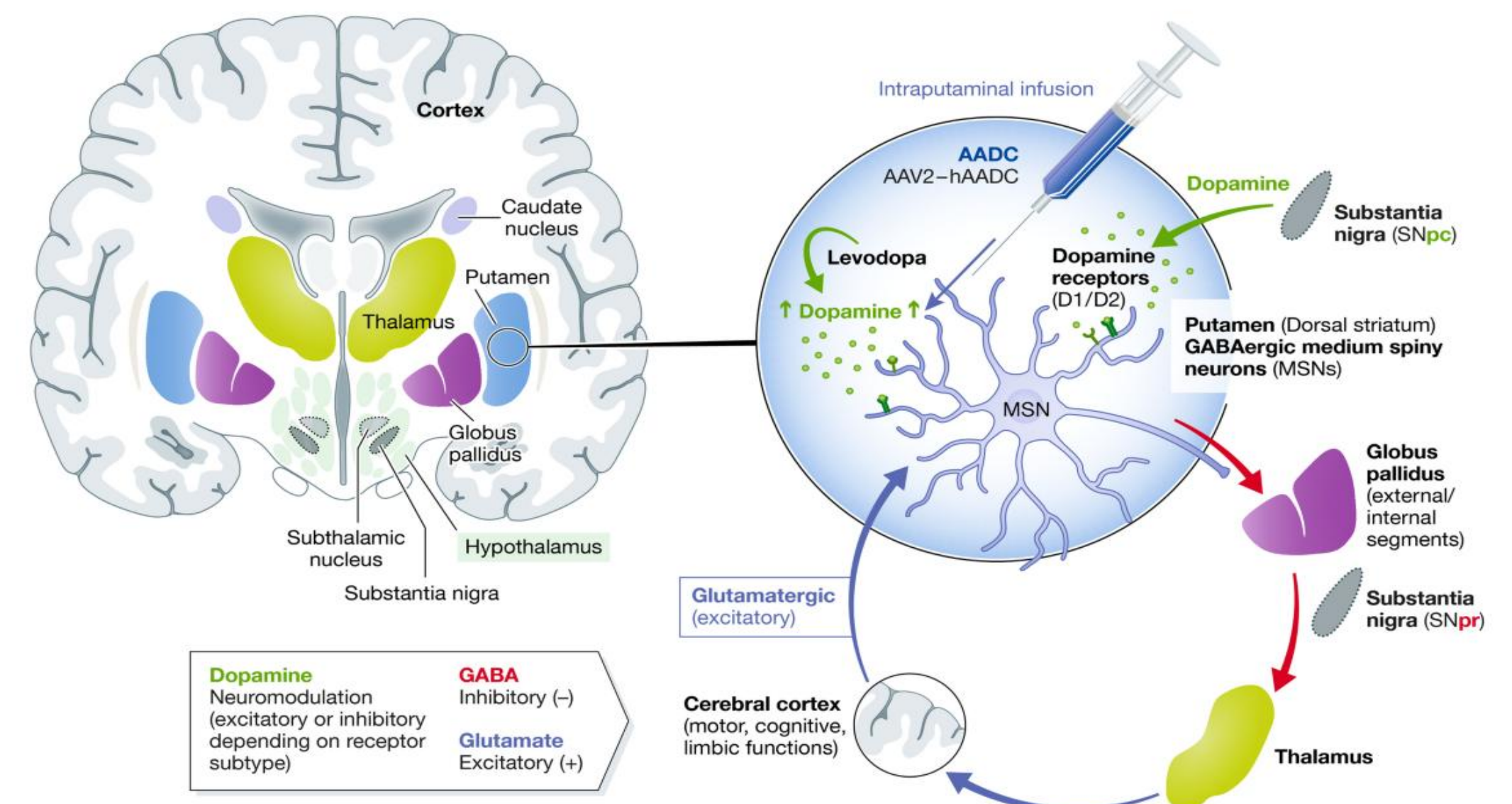


AIM AND OBJECTIVES

To synthesize evidence on clinical outcomes, health-related quality of life, and healthcare resource use and costs (direct and indirect) following EL-EX compared with best supportive care (BSC).

MATERIAL AND METHODS

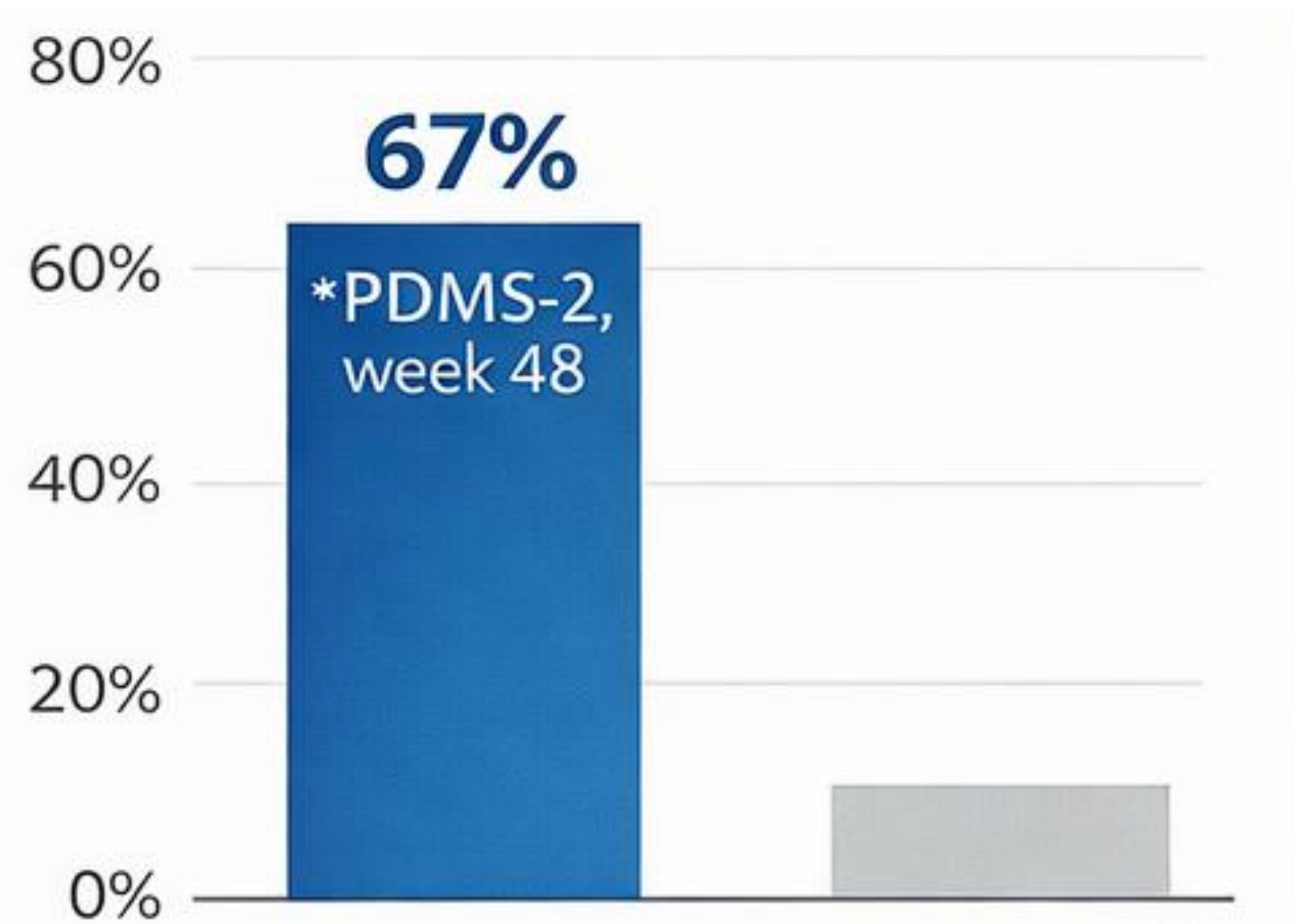
Targeted review of PubMed/PMC and regulatory/HTA sources through 02 Oct 2025, prioritizing peer-reviewed trials and economic evaluations. Study outcomes included motor milestone attainment, oculogyric crises, caregiver and patient HRQoL, safety, survival and quality-adjusted life-years (QALYs), and healthcare resource use and cost drivers.



RESULTS

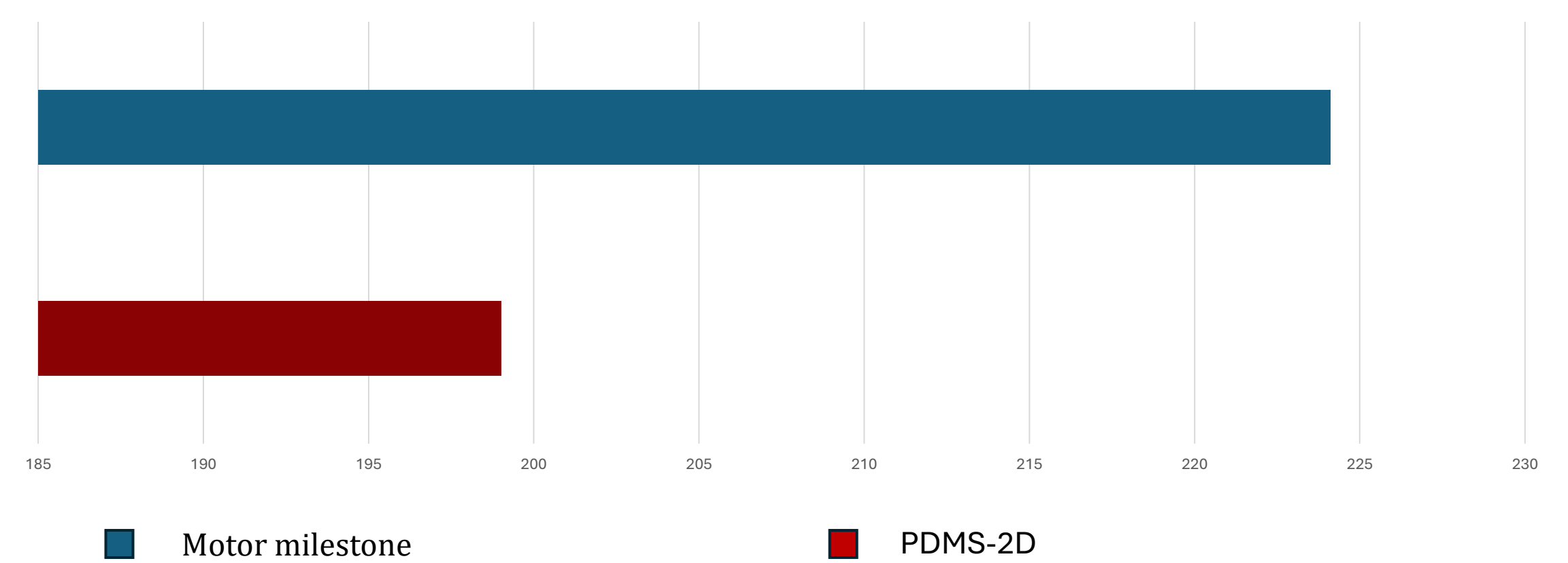
Open-label trials show clinically meaningful, durable gains in motor function and symptom control. In a prospective series, 67% achieved gross motor milestones by week 48 (PDMS-2); sitting and walking goals occurred in subsets. Oculogyric crises markedly improved. Safety was acceptable [1]. Long-term pooled analyses reported sustained milestone acquisition and caregiver HRQoL gains. Natural-history comparators show minimal milestone attainment with BSC over 5 years, underscoring treatment effect [2]. Economic evaluations from a US perspective reported discounted (3%) incremental QALYs of 20.83 (PDMS-2 MSD approach) and 18.44 (motor milestone), with ICERs of \$199,007 and \$224,104 per QALY versus BSC, respectively [3]. Scenario/sensitivity analyses were consistent. Models attribute cost offsets to fewer crisis-related admissions/emergency visits, reduced supportive therapies, and lower informal care time, balancing one-time acquisition/procedure costs. Empirical real-world resource-use data remain limited. Regulatory/HTA reviews concur on substantial benefits but note uncertainties from small samples and long-term extrapolation; HRQoL was not measured in all trials, informing use of utility vignettes in models.

Motor Milestones (PDMS-2, Week 48)

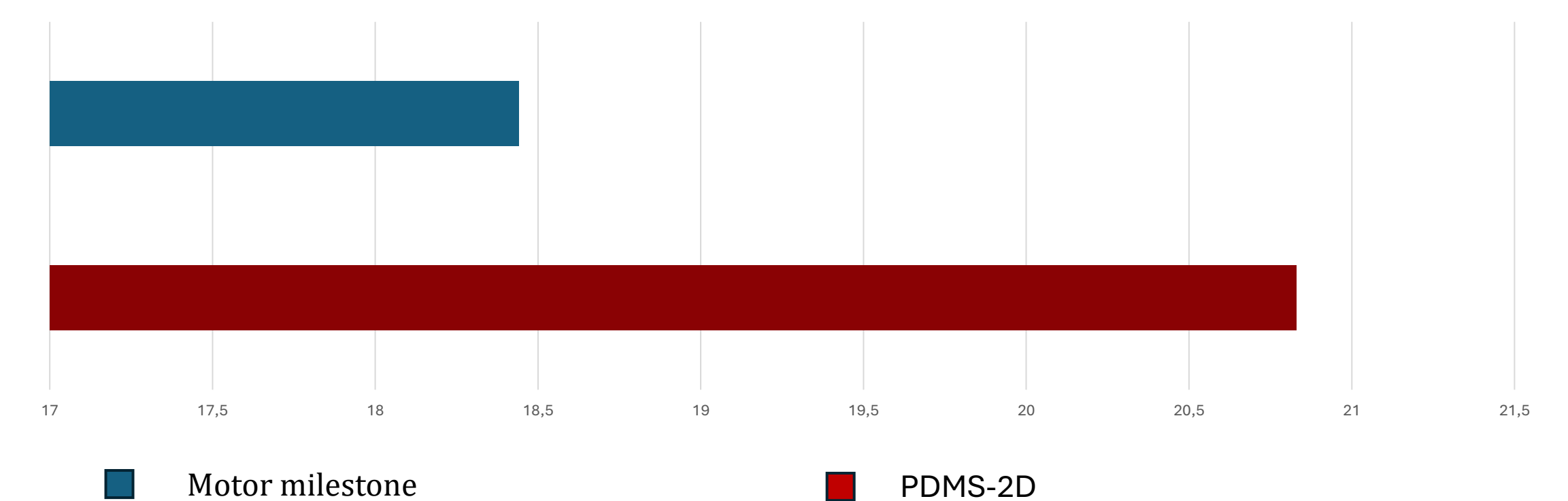


- Sitting and walking goals occurred in subsets
- Oculogyric crises markedly improved

ICER (in thousands of USD)



Incremental QALYs



CONCLUSION AND RELEVANCE

EL-EX confers durable benefits in severe AADC deficiency, with sustained motor improvement, fewer oculogyric crises, caregiver-reported HRQoL gains, and acceptable long-term safety. Health-economic models show substantial QALY gains and cost offsets from fewer acute events and lower care intensity, though lifetime costs may increase with longer survival. For hospital pharmacy, findings support multidisciplinary adoption, robust peri-operative management, and prospective tracking of resource use to validate savings and guide budget-impact analyses.

REFERENCES AND/OR ACKNOWLEDGEMENTS

- Goliker, A et al, JAMA(2025) doi:10.1001/jama.2024.28666
- Tai, CH et al, Molecular-Therapy(2022) doi.org/10.1016/j.ymthe.2021.11.005
- Zhang, R et al, Pharmacoeconomics(2025) doi.org/10.1007/s40273-025-01542-8