Utility, Costs and Cost-Utility of Amyloid-PET in the Diagnostic Process of Memory Clinic Patients A Trial-Based Economic Evaluation From AMYPAD-DPMS

Ingrid S. van Maurik, Daniele Altomare, Lyduine E. Collij, Camilia Caprioglio, Christian Moro, Valentina Garibotto, Jean-François Demonet, Philip Scheltens, Gill Farrer, Rosella Gismondi, Andrew W. Stephens, Jean Domingo Gispert, José Luis Molinuevo, Oriol Grau-Rivera, Paul Edison, Zuzana Walker, Frank Jessen, Alexander Dzrezga, Philip Zeyen, Pierre Payoux, Laure Saint-Aubert, Julien Delrieu, Agneta Nordberg, Frederik Barkhof, Giovanni B. Frisoni, Johannes Berkhof

Abstract:

Background: Amyloid positron emission tomography (PET) is instrumental in achieving an accurate diagnosis and may help to limit health-seeking behavior. Currently, amyloid-PET is not routinely used in clinical practice due to lack of evidence on cost-utility. We assessed the cost-utility of early versus no amyloid-PET in the diagnostic work-up of memory clinic patients after 6 months.

Methods: We assessed cost-utility of patients enrolled in AMYPAD-DPMS (EudraCT Number: 2017-002527-21) from six European memory clinics and randomized in ARM1; early amyloid-PET, ARM2; no amyloid-PET or ARM3; (amyloid-PET at request of the managing physician). ARM3 was not part of the cost-utility analysis. The EuroQol classification system (EQ-5D-5L), visual analogue scale (VAS), and ICEpop Capability measure for older people (ICECAP-O) were collected at baseline and 6 months. Costs were calculated from cost diaries at baseline, 3 and 6 months. The incremental cost-effectiveness ratio (ICER) was calculated using EQ-5D-5L and a societal perspective.

Results: From April 2018, to October 2020, 844 participants were screened and 840 were randomized (290 ARM1; 270 ARM2 and 280 ARM3). N = 514 (250 ARM1; 264 ARM2) were included in the economic evaluation. Amyloid-PET resulted in higher costs at 6 months (ARM1 vs. ARM2 Δ€1384, bootstrapped 95% CI [7, 2761]). No significant difference in EQ-5D-5L, VAS or ICECAP-O was found. The incremental cost-effectiveness ratio (ICER) was €461,333 per QALY.

Conclusion: Although patients receive an early etiological diagnosis, the cost-utility after 6 months is not favorable for amyloid-PET. The cost-utility will need to be reassessed when considering amyloid-PET to select patients for anti-amyloid biologics.

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