AMYPAD
Amyloid imaging to prevent Alzheimer´s Disease

Amyloid-PET and 18F-FDG-PET in the diagnostic investigation of Alzheimer's disease and other dementias

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Abstract:
Various biomarkers are available to support the diagnosis of neurodegenerative diseases in clinical and research settings. Among the molecular imaging biomarkers, amyloid-PET, which assesses brain amyloid deposition, and ^{18}F-fluorodeoxyglucose (^{18}F-FDG) PET, which assesses glucose metabolism, provide valuable and complementary information. However, uncertainty remains regarding the optimal timepoint, combination, and an order in which these PET biomarkers should be used in diagnostic evaluations because conclusive evidence is missing. Following an expert panel discussion, we reached an agreement on the specific use of the individual biomarkers, based on available evidence and clinical expertise. We propose a diagnostic algorithm with optimal timepoints for these PET biomarkers, also taking into account evidence from other biomarkers, for early and differential diagnosis of neurodegenerative diseases that can lead to dementia. We propose three main diagnostic pathways with distinct biomarker sequences, in which amyloidPET and ^{18}F-FDG-PET are placed at different positions in the order of diagnostic evaluations, depending on clinical presentation. We hope that this algorithm can support diagnostic decision making in specialist clinical settings with access to these biomarkers and might stimulate further research towards optimal diagnostic strategies.

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