A screening tool for evaluating the semantic deterioration in Alzheimer's disease: The Mini SKQ (Semantic Knowledge Questionnaire)

Laurent Lefebvre and Isabelle Simoes Loureiro

Cognitive psychology and neuropsychology department, Institute of health sciences and technologies, University of Mons, Belgium

Background: It is now well-accepted that semantic memory disturbance is one of the first symptom in Alzheimer 'disease (AD). However, this ability is not always investigated in the traditional neuropsychological assessment and is rather evaluated through non-specific semantic measurements. The objective of the Semantic Knowledge Questionnaire (SKQ) was to explore semantic impairment in AD patients. Proposed by Laiacona et al.[1], revised in a French version by Simoes Loureiro and Lefebvre[2], SKQ assesses some levels of hierarchy and attributes in semantic memory by the mean of 120 questions about 30 objects. The score for each question is 1 (expected answer) or 0 (error). The objective of this work is to create a brief version of our SKQ, with the most discriminant questions to AD, in order to be easily used in clinical environment.

Method and Results: We administered SKQ to 39 healthy senior (MMSE > or = 28) and 35 mild AD (MMSE > 20). An item by item analysis were conducted to compare our groups in order to pick up the most differentiated items. 12 items discriminating both group at a level of significance of $p = .001$ (by a khi-square analysis) were selected (4 questions about intracategorical aspects; 4 questions about perceptual attributes and 4 questions about thematical/functional attributes). We also performed correlational analyses for non-parametric data (Kendall's Tau correlation) to ensure that the failure to these 12 items are well correlated with AD ($p = .001$). Finally, a Bravais-Pearson correlation analysis confirms the correlation between the score at mini-SKQ and the full version of SKQ ($r = .992$; $p = .001$).

Conclusion: The Mini-SKQ is a fast and easily administered questionnaire, adapted for screening semantic knowledge. The failure to the items of the mini-SKQ is highly correlated to AD. These first observations underline that mini-SKQ could potentially be attractive for screening semantic memory deterioration in a clinical use.

[1]Laiacona M, Barbarotto R, Trivelli C, Capitani E. Dissociazoni semantiche intercategoriali descrizione di una batteria standardizzata e dati normativi. Archivio di Psicología, Neurología e Psichiatria, 1993 ; 54 : 209-48.

[2]Simoes Loureiro, I., & Lefebvre, L. Le QCS : questionnaire de connaissances sémantiques pour déterminer le stade de détérioration sémantique chez les patients atteints de la maladie d'Alzheimer. Gériatrie et Psychologie Neuropsychiatrie Du Vieillissement, 2015 ; 13(2), 225–33.