

가

가

가

(Lezak 1995).

가

1. 집행기능(Executive function)

(volition), (planning), (purposeful action), (effective performance)

(capacity for intentional behavior)

고위인지기능의 평가

가

가

가

가

가

(Lezak 1995).

가

가

(prefrontal regions)

가

가

가

/

가

가

(co-

ceptual series completion)

가

(Hodge 1994).

(Strub Black 1993).

가

가

가

1. 개념형성 및 추론

1) 언어형식의 개념형성에 관한 검사법

가

가

Wechsler tests, Stanford-

Binet scales

. Luria

(1966)

(“ ”- “ ”), (“ ”- “ ”), (“ - ”), (“ - ”), (“ - : - ”), (“ , , , ”)

2) 시각형식의 개념형성에 관한 검사법
 가 Category Test(Halstead 1947 ; Jarvis Barth 1994) , 208
 가 Raven’s Progressive Matrices(Raven 1960 ; Raven 1976)

60 가 Ra-ven’s Coloured Progressive Matrices, Raven’s Advanced Progressive Matrices

3) 언어성 추론능력에 관한 검사법
 가 Wechsler test (Comprehension) . Poisoned Food Problems(Arenberg 1968)

4) 시각적 재료를 이용한 추론능력에 관한 검사법
 Wechsler test (Picture Completion) (Picture Arrangement)가 . Stanford - Binet test (Picture Absurdities)

5) 계산 및 수리적 추정에 관한 검사법
 Wechsler test (Arithmetic)가 . 가 (Block Counting), 가 (Cognitive Estim -

Table 1. Evaluation of executive functions

Component	Methods of evaluation
Volition	Direct questions, reports by family, behavioral observation
Planning	Porteus Maze Test Trail Making Test Halstead Category Test Tower Test (London, Hanoi, Toronto) WAIS : Block Design, Picture Arrangement
Purposive action	Wisconsin Card Sort Test Tinkertoy Test Fluency test : verbal, written, design, gesture Drawing : alternating sequence, MN sequence, multiple loop Luria techniques : “ Go-no go ” paradigm, “ first-edge-palm ”
Effective performance	Random Generation Task Executive Function Route-Finding Tas

ation), (Calculation)

2. 집행기능 (Table 1)

1) 의 욕 (Volition)

가 .
 2) 계획수립 (Planning)
 가
 , 가 . 가
 Porteus Maze Test (Porteus 1965)가 .
 Tower Test , 가 (London, Hanoi, Toronto)가

Trail Making Test

(part A) , 가
 (part B)

3) 목적적 활동 (Purposive action)

(fluency test) 가
 가 .
 Controlled Oral Word Association
 Test (Benton 1968) F, A, S ,
 1 가
 3 가

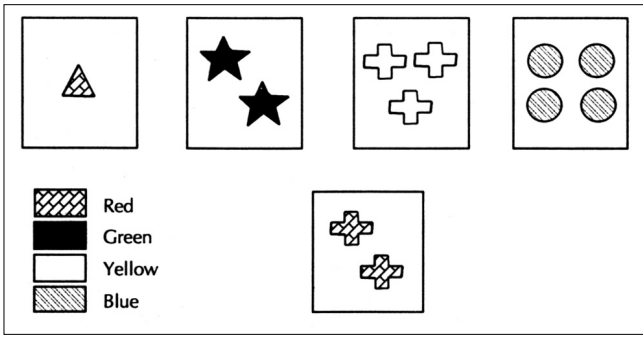


Fig. 1. Wisconsin Card Sort Test.

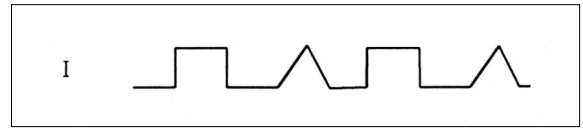


Fig. 2. Drawing tests : alternating sequence (), MN sequence (), and multiple loop ().

(“ Go - no go ” paradigm), “ fi - st - edgepalm ” , 가

4) 효율적 수행(Effective Performance)

가 100

Random Generation Task(Baddley 1968),

Executive Function Route - Finding Task(Boyd 1993)

3. 고위인지기능 평가를 위한 전산화 신경인지기능검사

(manual tests)

가

가 가 . 가
 , 가 가
 .
 (written fluency) 가 ,
 (Design Fluency Test)
 (gesture fluency) .
 가 Wisconsin Card Sort Test(Gr -
 ant Berg 1948) 가 .
 가, , 4
 , 가
 (Fig. 1). 64 128 ,
 , 4가 (, , ,), 4가 가 Vienna Test Sy -
 (, , 가,), 4가 (, , stem(Schuhfried 1993)
 ,) 가 가
 4 .
 가 가
 가
 가 10
 .
 10 , , 6
 (, , 2)가 128
 가 .
 Luria

(1966)

(Fig. 2), 가

2) 가설형성검사(Hypothesis Formation Test)

Matrix 가 , Matrix가
 matrix Matrix
 가 , 가

3) 그림학습검사(Adaptive Figure Sequences Learning Test)

가

‘?’

hierarchical rules

Andree (1992)

(recognition paradigm)

가

가

가

가

12

가

(concrete)

가

32

(Adaptive Number Sequences Learning Test)

(metalinguistic)

가

4) 보속성 검사(Perseverance Test)

가

9

, 가

(Picture Absurdities Test)

가

가

(Kasznik 1978 ;

Redundancy of the

Shuttleworth Huber 1989),

(Object - Sorting

first order(R1)

Re -

Task)

(Flicker 1986).

dundancy of the second order(R2)가

Raven's Colored Progressive Ma-

trices(Alexander 1973)

5) 작업 수행력 검사(Work Performance Series)

20

(Cummings 1990).

가

가

. 10 version

5

가

(Binetti 1996),

가

고위인지기능과 정신장애

(Padovni 1995).

1. 치 매

2. 정신분열병

(construction)

가

(cognitive task)

가

가

(Hoff 1992 ; Sullivan

1994).

가

(Bromley

1957), Halstead - Reitan Battery Category Test(Reed & Reitan 1963 ; Schludermann 1983), Raven's Progressive Matrices(Botwinick 1973)

(Tollefson 1996).

(Goldb -

erg 1993 ; Spohn Strauss 1989).

(Moss Albert 1988),

(1993) (Morice Delahunty 1996). Royall 가
 가
 , Breier (1991)
 (current psychosocial function) 가
 (predictor) 가
 Wisconsin Card Sort Test
 Zec(1995)
 (disorders of volition and executive function)
 Kraepelin (dementia
 praecox)

가
 가
 (Cicerone Wood 1987).
 가
 (prefrontal cortex)
 , Wisconsin Card Sort Test 가 (Lovell
 Franzen 1994).

결론

clozapine
 가 가 가
 (Buchanan 1994 ;
 Hoff 1996).

가
 가 가
 가 가
 가

3. 기타 정신장애

가
 (LaRue 1986).
 가
 (Jones 1988), vegetative symptom
 가 가 (Pa-
 lmer 1996).
 가 , Schaeffer
 (1988) 가 가 가
 Harden Pi-
 hl(1995) 가
 가
 Giancola (1996)
 (social drinker) 가
 가

중심 단어 :

참고문헌

Alexander DA(1973) : Some tests of intelligence and learning for elderly psychiatric patients : A validation study. *British Journal of Social and Clinical Psychology* 12 : 188-193

Andree B, Hittmair M, BenKe YH(1992) : Recognition and explanation of proverbs in Alzheimer's disease. *Journal of Clinical and Experimental Neuropsychology* 14 : 372

Arenberg D(1968) : Concept problem solving in young and old adults. *Journal of Gerontology* 23 : 279-282

Baddley AD(1968) : *Working memory*. Oxford, Clarendon Press

Benton AL(1968) : Differential behavioral effects in frontal lobe disease. *Neuropsychologia* 6 : 53-60

Binetti G, Magni E, Padovani A, Cappa SF, Bianchetti A, Trabucchi M(1996) : Executive dysfunction in early Alzheimer's disease. *J Neurol Neurosurg Psychiatry* 60 : 91-93

Botwinick J(1973) : *Aging and behavior*. New York, Springer

Boyd TM, Sautter SW(1993) : Foute-Finding : A measure of everyday executive functioning in the head-injured adult. *Applied Cognitive Psychology* 7 : 171-181

Breier A, Schreiber JL, Dyer J, Pickar D(1991) : National Institute of Mental Health longitudinal study of chronic schizophrenia. *Arch Gen Psychiatry* 48 : 239-246

- Bromley DB (1957)** : *Some effects of age on the quality of intellectual output. Journal of Gerontology* 12 : 318-323
- Buchanan RW, Holstein C, Breier A (1994)** : *The comparative efficacy and long-term effect of clozapine treatment of neuropsychological test performance. Biol Psychiatry* 36 : 717-725
- Cicerone KD, Wood JC (1987)** : *Planning disorder after closed head injury : a case study. Arch Phys Med Rehabil* 68 : 111-115
- Cummings JL (1990)** : *Clinical diagnosis of Alzheimer's disease. In : Alzheimer's disease : Treatment and long-term management, Ed by Cummings JL, Miller BL, New York, Marcel Dekker; pp3-22*
- Flicker C, Ferris SH, Crook T, Bartus RT (1986)** : *The effects of aging and dementia on concept formation as measured on an object-sorting task. Developmental Neuropsychology* 2 : 65-72
- Giancola PR, Zeichner A, Yarnell JE, Dickson KE (1996)** : *Relation between executive cognitive functioning and the adverse consequences of alcohol use in social drinkers. Alcohol Clin Exp Res* 20 : 1094-1098
- Goldberg TE, Greenberg RD, Griffin SJ, Gold JM, Kleinman JE, Pickar D, Schulz SC, Weinberger DR (1993)** : *The effect of clozapine on cognition and psychiatric symptoms in patients with schizophrenia. Br J Psychiatry* 162 : 43-48
- Grant DA, Berg EA (1948)** : *A behavioral analysis of the degree of reinforcement and ease of shifting to new responses in a Weigl-type card sorting problem. Journal of Experimental Psychology* 38 : 404-411
- Halstead WC (1947)** : *Brain and Intelligence. Chicago, University of Chicago Press*
- Harden PW, Pihl RO (1995)** : *Cognitive function, cardiovascular reactivity, and behavior in boys at high risk for alcoholism. J Abnorm Psychol* 104 : 94-103
- Hodge JR (1994)** : *Cognitive assessment for clinicians. New York, Oxford University Press, pp19-25*
- Hoff AL, Faustman WO, Wieneke M, Espinoza S, Costa M, Wolkowitz O, Csernansky JG (1996)** : *The effects of clozapine on symptom reduction, neurocognitive function, and clinical management in treatment-refractory state hospital schizophrenic inpatients. Neuropsychopharmacology* 15 : 361-369
- Hoff AL, Riordan H, O'Donnell DW, Morris L, DeLisi LE (1992)** : *Neuropsychological functioning of first-episode schizophreniform patients. Am J Psychiatry* 149 : 898-903
- Jarvis PE, Barth JT (1994)** : *The Halstead-Reitan neuropsychological battery : a guide to interpretation and clinical applications. Odessa FL, Psychological Assessment Resources, pp11-13*
- Jones BP, Henderson M, Welch CA (1988)** : *Executive functions in unipolar depression before and after electroconvulsive therapy. Int J Neurosci* 38 : 287-297
- Kaszniak AW, Fox J, Gandell DL, Garron DC, Hunckman MS, Ramsey RG (1978)** : *Prediction of mortality in presenile and senile dementia. Annals of Neurology* 3 : 246-252
- LaRue A, Spar J, Hill CD (1986)** : *Cognitive impairment in late-life depression : Clinical correlates and treatment implications. Journal of Affective Disorders* 11 : 179-184
- Lezak MD (1995)** : *Neuropsychological Assessment. 3rd ed. New York, Oxford University Press, pp602-685*
- Lovell MR, Franzen MD (1994)** : *Neuropsychological assessment. In : Neuropsychiatry of traumatic brain injury, Ed by Silver JM, Yudofsky SC, Hales RE, Washington DC, American Psychiatric Press, pp133-160*
- Luria AR (1966)** : *Higher cortical functions in man. New York, Basic Books*
- Morice R, Delahunty A (1996)** : *Frontal / executive impairments in schizophrenia. Schizophr Bull* 22 : 125-137
- Moss MB, Albert MS (1988)** : *Alzheimer's disease and other dementing disorders, In : Geriatric neuropsychology, Ed by Albert MS, Moss MB, New York, The Guilford Press, pp145-178*
- Padovani A, Di Piero V, Bragoni M, Iacoboni M, Gualdi GF, Lenzi GL (1995)** : *Patterns of neuropsychological impairment in mild dementia : a comparison between Alzheimer's disease and multi-infarct dementia. Acta Neurol Scand* 92 : 433-442
- Palmer BW, Boone KB, Lesser IM, Wohl MA, Berman N, Miller BL (1996)** : *Neuropsychological deficits among older depressed patients with predominantly psychological or vegetative symptoms. J Affect Disord* 41 : 17-24
- Porteus SD (1965)** : *Porteus Maze Test. Fifty years' application. New York, Psychological Corporation*
- Raven JC (1960)** : *Guide to the Standard Progressive Matrices. London, H.K. Lewis*
- Raven JC, Court JH, Raven J (1976)** : *Manual for Raven's Progressive Matrices. London, H.K. Lewis*
- Reed HBC, Reitan RM (1963)** : *A comparison of the effects of the normal aging process with the effects of organic brain damage on adaptive abilities. Journal of Gerontology* 18 : 177-179
- Royall DR, Mahurin RK, True JE, Anderson B, Brock IP, Freeburger L, Miller A (1993)** : *Executive impairment among the functionally dependent : comparisons between schizophrenic and elderly subjects. Am J Psychiatry* 150 : 1813-1819
- Schaeffer KW, Parsons OA, Errico AL (1988)** : *Abstracting deficits and childhood conduct disorder as a function of familial alcoholism. Alcohol Clin Exp Res* 12 : 617-618
- Schludermann EH, Schludermann SM, Merryman PW, Brown BW (1983)** : *Halstead's studies in the neuropsychology of aging. Archives of Gerontology and Geriatrics* 2 : 49-172
- Schuhfried G (1993)** : *The PC/S Vienna Test System : The universal system for computer-aided diagnostics and therapy in psychology and medicine. Vienna, Dr Gschuhfried Ges MBH*
- Shuttleworth EC, Huber SJ (1989)** : *The Picture Absurdities Test in the evaluation of dementia. Brain and Cognition* 11 : 50-59
- Spohn HE, Strauss ME (1989)** : *Relation of neuroleptic and anticholinergic medication to cognitive functions in schizophrenia. J Abnorm Psychol* 98 : 367-380
- Strub RL, Black FW (1993)** : *The mental status examination in neurology. 3rd ed, Philadelphia, FA Davis Company, pp121-133*
- Sullivan EV, Shear PK, Zipursky RB, Sagar HJ, Pfefferbaum A (1994)** : *A deficit profile of executive, memory, and motor functions in schizophrenia. Biol Psychiatry* 36 : 641-653
- Tollefson GD (1996)** : *Cognitive function in schizophrenic patients. J Clin Psychiatry* 57 (suppl 11) : 31-39
- Zec RF (1995)** : *Neuropsychology of schizophrenia according to Krapelin : disorders of volition and executive functioning. Eur Arch Psychiatry Clin Neurosci* 245 : 216-23