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Auditory processing disorders in children with learning disabilities

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Background and aims: Auditory Processing Disorder (APD) is defined as a disorder in recognition, discrimination, separation, grouping, localisation or ordering of sounds. AP evaluation of children with learning disorders has two goals: 1) to rule out an auditory processing disorder (APD) as a contributing factor for impaired cognition and 2) to diagnose APD in children with learning disabilities, in order to ensure appropriate remediation.

Methods: 46 children were evaluated for Auditory Processing Disorders. 40 of them were fully assessed in 2 sessions each. 6 were lost to follow-up. We applied the: a) Peripheral hearing testing: Otoscopy, PTA, Speech audiometry b) AP battery: Speech in noise, Duration Pattern Sequence (DPS), Pitch Pattern Sequence (PPS), Random GAP. c) Speech in noise: normative data from our lab. d) DPS, PPS, Random GAP: Standardized tests (Auditec, St. Louis). e) Learning Disability battery: WISC-III, Language tests (phonemic synthesis, non-words).

Results: 22 (of 40) 55% are diagnosed with Auditory Processing Disorders (at least 1 of the AP tests is pathological.) All 22 children with APD are already receiving appropriate treatment according to their auditory processing deficits and are being followed up for their progress. APD management strategies include: 1. Signal enhancement strategies 2. Specific Auditory Training 3. Linguistic, cognitive, metacognitive and educational strategies

Conclusions: Identification of underlying specific auditory deficits in the heterogeneous group of LD children may indicate what remedial action is appropriate, since appropriate management of the auditory processing deficits may lead to improved auditory as well as reading skills.

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The influence of genetic polymorphisms on white matter lesion load in dementia

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Introduction: Ischemic neuronal disintegration of the brain tissue is a main risk factor for the development of a vascular dementia (VD). Because of the complexity of cerebrovascular and other factors it is not possible to describe the whole variance of the incidence of VD merely by genetic polymorphisms, however they may explain a part of the complexity. Nevertheless there is hope to identify the contribution of genetic markers in VD.

Material and methods: Data of clinically, neuropsychologically, neuroradiologically and genetically examined patients (n = 236) of a memory clinic were analysed upon the interrelation of clinical diagnosis according to ICD-10 and genetics, differentiated in the diagnostic groups: cognitively healthy persons (XD, n=65), VD (n=56) and Alzheimer's Disease (AD, n=115).

Comparison of groups was done using descriptive statistics and analysis of variance.

Results: The VD group (n=56) was genetically different compared to both groups, patients with Alzheimer disease (AD, n=115) and cognitively healthy persons (XD, n=65). For VD, there was a statistically significant correlation between some genetic markers and wML load.

Conclusion: Regarding procentual frequency of the polymorphisms genetic pattern in patients with VD are different to XD but not to the AD group.

The wML load is higher in VD and AD then in XD.

In general, the results are arguments against dichotomy and for the hypothesis of interaction between VD and AD in older age.

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White matter lesion (WML) load and clock drawing test (CDT): a comparison of two diagnostic tools in dementias

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Introduction: One of the signs of severity of a Vascular Dementia (VD) is white matter lesion load, although white matter lesions also occur in Alzheimer's Dementia. These lesions reduce some cognitive and executive functions of the brain, that also affect the ability to draw a clock in CDT.

Here we would like to examine if there is a relation between WML load and severity of errors in the clock drawing test.

Material and methods: Patients (n = 236) of a memory clinic were examined clinically, neuropsychologically and neuroradiologically and differentiated in the following diagnostic groups according to ICD-10: cognitively healthy persons (XD, n=65), VD (n=56) and Alzheimer's Disease (AD, n=115).

A large number of neuropsychological tests were done, one of them was the CDT, which was rated with a specially developed 8-point scale developed in our hospital instead of the 6-point scale established by Shulman.

Rating of the WML load was done according to a special 48-point score, also developed in our house.

Comparison of groups was done using descriptive statistics and analysis of variance.

Results: For all the three groups we found a statistically significant correlation between WML load and CDT score on the p < 0,05 level.

Regarding the CDT score there was a highly significant correlation between XD/VD and XD/AD, but no correlation between VD/AD.

Conclusion: CDT seems to be an interesting tool in estimating wml load in dementias.

The lack of discrimination between VD/AD could be perhaps overcome with an even finer scale.

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The occurrence of psychiatric disorders in patients with traumatic brain injury

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Background and aims: In clinical practice, psychiatric morbidity of ten seems to complicate rehabilitation after traumatic brain injury (TBI). The aim of this study was to evaluate the occurrence of psychiatric disorders at 12 months after TBI.

Methods: Thirty-eight subjects had been referred to Turku University Hospital because of a recent TBI. Psychiatric disorders were assessed with the Schedules for Clinical Assessment in Neuropsychiatry (SCAN, version 2.1).

Results: Six subjects (15.8%) had a psychiatric disorder with onset after TBI. The rates of these disorders were as follows: major depressive disorder 7.9%, depressive disorder not otherwise specified 5.3%, and posttraumatic stress disorder 2.6%. During the 12-month period before TBI, a psychiatric disorder could be diagnosed retrospectively in 14 subjects (36.8%). The most common disorders were alcohol dependence (18.4%) and major depressive disorder (10.5%). When disorders with onset before TBI and after TBI were considered together, 44.7% of the patients had psychiatric morbidity during the first 12 months after TBI. The lifetime rate of psychiatric disorders was as high as 65.8%.

Conclusions: During the first 12 months after TBI, the development of psychiatric disorders was less common than expected. However, depressive disorders were prevalent. Before TBI, alcohol use disorders were frequently found. As the occurrence of psychiatric disorders seems to be high in individuals with TBI, a need for psychiatric evaluation should be kept in mind when treating patients after TBI.

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Mutually related depression and dementia syndromes in elderly patients

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Background and aims: Depression and dementia are the most frequent mental disorders at senior age. It is assumed that long-term depressions grow into dementia and the relationship between both syndromes has been discussed. The purpose of our study was to establish whether there exists mutual relationship between dementia and depression and whether depression resistant to therapy is a risk factor for dementia development.

Methods: 25 patients who suffered prolonged phases of depression resistant to therapy were included and monitored for two years. Their average age was 75.4 years (range 65 to 88). The diagnosis of the group was as follows: 11 patients suffered from periodical depressive disorder, 7 patients from depressive phase, 1 patient from bipolar affective disorder and 6 patients from organic depressive disorder. The patients met the diagnostic criteria of severe depression according to ICD-10, the depression grade was assessed by the Geriatric Depression Scale by Yessavage. The diagnosis of dementia was based on clinical examination, CT of the brain, cognitive functions were assessed using the MMSE test.

Results: 11 patients of the 25 observed persons with chronified depression symptoms passed into dementia in the course of 2 years. They were 4 patients suffering from periodical depressive disorder, 4 patients with depressive phase and 3 patients with organic depressive disorder.

Conclusions: Our study implies that the development of dementia in depressive patients is significantly more frequent than in non-depressive persons of comparable age. Chronic depression resistant to therapy represents a risk factor for the development of dementia.

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Early psychical disorders at children with epilepsy

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Introduction: A research of an early psychical disorder at children plays an important role in exploration of epilepsy. These children have broad spectrum of various pathological states which manifest early attacks of epilepsy (Betts T.A., 1995). The aim of current research is to learn early psychical disorders at children with epilepsy.

Methods: 346 children in the age of 3-18 with epilepsy and psychical, behavioral disorders were observed between attacks of epilepsy. The disorders were compared with DSM- IV.

Results: In most cases (54,9%) psychical, behavioral disorders didn't have association with epilepsy and in 45,1% of cases had association with epilepsy. These disorders had four variants: the mental deficiency – 70%, the psychoorganical syndrome – 21,6%, autism spectrum disorders – 2,6% and behavioral disorders – 5,8%.

190 children with psychical disorders had many injury factors in ontogenesis of brain. These factors were complicated pregnancy and childbirth, a trauma in the childbirth, negative heredity (relations these children had the mentally subnormal and additional problems) and unfavorable environment. Children had the symptomatically, generalizationally and focally forms of the epilepsy.

Conclusions: At children epilepsy may be accompanied by the mental deficiency, psychoorganical syndrome, autism spectrum disorders and behavioral disorders. These conditions have no association with debut of epilepsy but psychical disorders and epilepsy undoubtedly complicate each other making these disorders harder.

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An attempt of factorial analysis of the typological formation of non-psychotic disturbances after brain damage

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Aim: To find out the dynamic peculiarities of the formation of non-psychotic (neurotic) disturbances after brain damage, and how non-organic factors conduce to their development.

Methods: 124 patients with non-psychotic disturbances after brain damage were examined (mean age-35.7±1.11, mean duration-6.23±0.57) by dynamic clinical-psychopathological method. Using specially designed questionnaires the social-psychological states of the patients were assessed. They also completed SCL-90.

Results: The patients distributed into 3 groups according to psychopathological analysis of the neurotic syndromes. 31 of them developed asthenic-depressive disturbances (G1), 57—personality changes (G2), 36-hypochondriacal disturbances(G3). The number of patients after brain trauma in G3 was lower than in G1 ($p<0.01$) and G2 ($p<0.001$). After intoxications the number of patients in G3 was higher, than in G1 ($p<0.05$) and G2 ($p<0.001$). Significant differences were found by the burdened familial history of mental disorders and premorbid constitutional accentuations of personality between G1 and G3 ($p<0.05$). 51 patients of the G2 (89.5%) were affected by severe psychogenic factors, but only 10 patients in G1 (32.2%) and 8 patients in G3 (22.2%) had the same influences. So the number of distressed patients in the G2 was higher than in G1 ($p<0.001$) and G3 ($p<0.001$). The Hostility by SCL-90 is higher in G2, than in G1 ($p<0.05$) and G3 ($p<0.001$).