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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 Alzheimeŕs 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 Alzheimeŕs 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 beetween 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 Alzheimeŕs 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 beetween XD/VD and XD/AD, but no correlation beetween VD/AD.

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

The lack of discriminatin beetween 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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