

cascade of interactions among environment, brain and behaviour initiated by trauma. The preventive activities are needed, on all three levels of prevention. These activities are part of the Refugee Mental Health Assistance Programme which covers three levels (education, research and treatment), undertaken by the Institute for Mental Health's network of professional teams in Yugoslavia. This Programme, lasting for seven years, plays an important role in reducing the negative long-term consequences of extreme trauma.

S23-5

HELP SEEKING AND POSTTRAUMATIC STRESS DISORDER SYMPTOMS IN SURVIVORS OF TORTURE

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Research over the last decades has demonstrated that torture is often followed by multiple symptoms in most or all survivors. Though posttraumatic stress disorder (PTSD) appears to be the most common diagnostic entity, its relative importance for the patient has been frequently questioned.

To ascertain the reason of help seeking in a series of 22 survivors of torture, practical and medical reasons for help seeking and referral, that had been recorded as part of the diagnostic interview, together with symptoms of the DSM-III R list of symptoms of PTSD were compared with patients subjective ratings of the relative importance of somatic and psychological symptoms. Patients had been asked for the two most subjectively stressing or inhibiting symptoms, present at the time of evaluation.

All but one patients fulfilled DSM III R criteria for PTSD, with symptoms from all clusters of DSM-III R being present in all patients. The most important distressful symptoms listed were disturbed sleep (n = 19), nightmares (n = 15), and impaired concentration (n = 14). Treatment for this symptoms though, was not seen as central to contacting the hospital in a large subgroup (n = 13) of patients, with a broader range of reasons given. No patient had been diagnosed as suffering from PTSD before. The high frequency of a clinical diagnosis of other DSM-III R disorders in the majority of patients gave rise to a later change in evaluation strategies.

S24. ADHD and related syndromes

Chairs: MH Schmidt (D), E Taylor (UK)

S24-1

WHICH SUBGROUPS OF ADHD ARE CLINICALLY RELEVANT?

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ADHD is defined simply by the presence of persistently and pervasively inattentive and/or overactive behaviour. The problems are usually regarded as heterogeneous, but more research is needed about how they should be classified. This paper reviews some proposed subgroups.

Hyperkinetic Disorder: is a subgroup of AD/HD characterised by mixed inattentive and impulsive symptoms, high severity and pervasiveness, early onset and the absence of comorbid problems. The category is validated by high rates of biological abnormalities and is a particularly strong indication for stimulant medication.

Attention Deficit Without Hyperactivity: Attention deficit is separable from overactivity/impulsivity. The psychiatric risk resides in the overactivity/impulsivity component; while those with attention deficit appear to be at risk for educational failure. They are separate developmental tracks, linked by overlapping causes.

Situation-Specific Hyperactivity: Hyperactivity seen only in the home setting has a similar pattern of predictive associations to "oppositional disorder". Hyperactive behaviour that is specific to the school setting tends to have a late onset and an association with specific learning disorders.

Hyperkinetic Conduct Disorder: When the two occur together, conduct disorder seems to be a complication of hyperactive behaviour, not a comorbid disorder; and those with both problems have the associations of both.

Comorbid Emotional Disorders: The presence of anxiety symptoms in those with ADHD predicts failure of the ADHD symptoms to respond to a stimulant. The mixed pattern is a distinct developmental pathway in which the anxiety can be primary.

Comorbid Learning Difficulties: Academic problems and hyperactivity behave as separate developmental tracks; each predicts itself over time but not the other.

The goals and methods of treatment differ in these subgroups of ADHD.

S24-2

DOPAMINE D4 RECEPTOR GENE POLYMORPHISM IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) — A BIOLOGICAL MARKER?

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The concordance rate for ADHD in monozygotic twins is about 80% compared to about 30% for same sex dizygotic twins. Thus, one hypothesis asserts that the symptoms of ADHD are related to hypodopaminergic function, as drugs like methylphenidate, that increase synaptic dopamine (DA) lessen the symptoms. The dopamine D4 receptor gene (DRD4), encoding one of five known protein receptors that mediate the postsynaptic actions of DA, display a very high degree of variation in the human population. The main source of this variability is a 48-bp region that can be repeated two to eleven times. It has been reported that in ADHD the D_{4.7} variant occurs more frequently than the D_{4.4} variant. The D_{4.7} variant is associated with excitability and impulsiveness. In this study, we examine the DRD4 gene polymorphism in a well-characterized sample of children with ADHD in comparison to children with other psychiatric disorders and normal controls.

S24-3

CEREBELLUM IN ATTENTION DEFICIT/HYPERACTIVITY DISORDER: AN MRI MORPHOMETRIC STUDY

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Attention Deficit/Hyperactivity Disorder (ADHD) is the most common behavioral diagnosis in childhood. According to the DSM-IV, it may be diagnosable as 3 subtypes in which inattention and hyperkinesia/impulsivity are predominant or combined. Until now neuroimaging studies have focused on the prefrontal cortex and basal ganglia while neuropsychological studies suggest that impairment in central executive function is the core deficit. These

results have lead to the hypothesis that a dysfunction of prefrontal-striatal circuitry underlies this syndrome.

Recent studies have demonstrated a cognitive role for the cerebellum, including attention. Clinical data, such as subtle neurological signs or cerebellar-vestibular test impairment seen in children with ADHD, suggest that the cerebellum may also play a role in the pathophysiology of this syndrome.

Morphometric MRI studies have been conducted in 74 right-handed boys and girls with ADHD, and 87 healthy controls. Psychiatric interview and neuropsychological evaluation have been performed in every cases. Cerebellar and vermal volumes as well as vermal midsagittal area have been quantified using an image analysis software. Three groups were collected together with the separate age and sex and handedness matched healthy controls over a 5 years period at the NIMH: 1) a group of boys with ADHD 2) a separate group of ADHD medication naive subjects 3) a group of ADHD girls.

Total cerebellar volume did not differ between ADHD and control groups. Within the 3 studies results were similar. Vermis midsagittal area and volumes were significantly smaller for ADHD subjects than for controls. This reduction involved particularly the posterior-inferior lobe (lobules VIII-X) in the three groups. These results remain significant after adjustment for total brain volume, age, or IQ (analysis of covariance).

The studies suggest that dysfunction of cerebellar-thalamo-prefrontal circuitry may subserve the motor control and motor inhibition deficits encountered in ADHD. Cerebellum may also play a role in executive function deficits, acting probably as a co-processor interfering with prefronto-striatal loop enhancing speed and efficiency. Further clinical analyses and functional imaging studies have to be conducted in order to better understand neural networks involved in cognitive deficits in this syndrome.

S24-4

THE EFFECTIVENESS OF METHYLPHENIDATE ON ATTENTION PROCESSES IN ADHD CHILDREN

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It was investigated whether children with ADHD show abnormalities in early and/or late attentional processes, and in which way methylphenidate (MPH) influences such processes. Early attentional processes were studied in a selective attention paradigm, in both the auditory and the visual modality. The capacity of late attentional processing was studied in a visual dual task paradigm. During the tasks, event-related brain potentials (ERPs) were measured.

For each task, a group children with ADHD and a group normal control children, age 7-12, was measured. Thereafter, the ADHD children participated in a double-blind placebo controlled study, using the same tasks, in which the effects of 15 mg MPH were determined. With respect to early selection processes, it was found that ADHD children performed worse than controls in both modalities. Also, ADHD children showed smaller ERP-peaks which were related to early auditory selection processes. Effects of MPH, however, were most clearly seen in the visual condition.

With respect to later attentional processing, ADHD children showed worse performance. Evidence was found that ADHD children show a late attentional capacity allocation-defect. MPH had an enhancing effect on both performance and ERPs.

It was concluded that MPH has a non-specific ameliorating effect on performance and ERP-peaks, rather than alleviating specific defects.

S24-5

THE INFLUENCE OF METHYLPHENIDATE ON ATTENTION AND IMPULSIVITY OF ADHD-CHILDREN: A PHARMACOLOGICAL DISSECTION STUDY

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The effects of methylphenidate (MPH) on performance and ERP's in a selective attention task (Dichotic Listening), capacity-allocation task (irrelevant probe technique) and in a inhibition task (stop signal paradigm) were studied in 14, 14 and 16 schoolaged ADHD children. Besides the effect of methylphenidate, te effects of L-dopa and desipramaine on inhibitory-processes in 16 ADHD children were studied. Results showed that Methylphenidate enhanced performance on selective attention and cognitive evaluation but not oninhibition-task, while MPH enhanced PN and P₃ amplitudes. Desipramine (a noradrenergic agonist) was the only drug that influenced inhibition performance. Implications of these results will be discussed.

SEC25. Diagnosis and treatment of impulse regulation disorders in mentally retarded patients

Chairs: W Verhoeven (NL), S Tuinier (NL)

SEC25-1

DIAGNOSIS AND NEUROBIOLOGY OF IMPULSE CONTROL DISORDERS

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Impulse control disorders encompass a broad variety of behavioral disorders grouped together on a descriptive level because they have as common denominator an exacerbation of some sort of behavior. In clinical psychiatry disordered impulse control in a restrictive sense is closely linked to the so-called personality disorders in spite of the fact that abnormalities on the behavioral level can occur in a variety of clinical conditions. The dimensional idea in biological psychiatry advocated the approach that biological dysfunctions may be linked to specific psychological dysfunctions irrespective the nosological context in which they occur. Meta analysis of these kind of studies revealed, however, that disturbed central serotonin metabolism is associated with impulsivity only within the context of other disorders e.g. personality disorders. In mental retardation treatment studies with serotonin modulating compounds (e.g. SSRI's and 5-HT₁ agonists), targeted at behavioral disorders, show beneficial effects that can at least partly be explained by the effect on non-targeted aspects such as arousal, stress reactivity and sensory hypersensitivity. In a variety of cases modification of disturbed behavior seems to be secondary to the successful treatment of underlying neuropsychiatric disorders that may present with atypical symptom profiles. Especially syndromes not regularly thought, are of importance such as: unstable mood disorder, cycloid psychosis, stress feed-back resistance and unspecified bipolar disorder. So, in spite of accumulating data from