living conditions in the community. The well developed social services have also supported this adaptation to the decreasing use of mental hospital beds. Further changes will be studied with the new patient cohort discharged in 1994.

S41. Neurobiology and pharmacotherapy of impulsive behaviour

Chairs: W Maier (D), H Sass (D)

S41-1

PSYCHOLOGICAL AND PSYCHOPATHOLOGICAL CONCEPTS OF IMPULSIVENESS AND IMPULSE CONTROL DISORDERS

S. Herpertz*, H. Sass. *Rheinisch-Westfaelische Technische Hochschule Aachen, Germany*

A deficit of impulse control is discussed in an increasing number of mental disorders. One of the major problems in examining impulsiveness in clinical settings, however, is a lack of conceptual framework which aims at a scientific definition of impulsiveness. Current classification systems restrict impulsiveness exclusively to impulsive modes of behavior. Psychology has a broader concept as it regards impulsiveness as the enduring tendency to respond quickly and impetuously to a stimulus rather than inhibiting the response. A study design will be presented providing data on different aspects of impulsiveness in a sample of N = 122 personality disordered subjects with different impulsive modes of behavior. Findings indicate that impulsiveness is not restricted to single impulsive events but reflects a pervasive long-term functioning including an irritable, aggressive behavioral style, a lack of future-oriented problem-solving, difficulties to shift between cognitive sets as well as intense responding to emotional stimuli. Finally a concept of impulsive personality functioning is suggested which includes emotional and cognitive beside behavioral phenomena.

S41-2

TESTOSTERONE AS AN INDICATOR OF AN ALTERED 5-HT RESPONSIVITY IN AGGRESSIVE SUBJECTS

P. Netter*, J. Hennig, B. Meier, S. Rohrmann. *Dept. of Psychology, University of Giessen, Germany*

There is evidence that serotonin (5-HT) does not only stimulate cortisol via the HPA axis but also suppresses testosterone via the gonadal axis. Since high testosterone levels and responses as well as low serotonin activity have also been shown to be related to dispositional and experimentally induced aggression, the investigation of the relationship between 5-HT and testosterone by two experiments on aggression in humans seemed a promising approach.

The first study comprised 40 male subjects randomly assigned to experimental induction of aggression or a control condition as well as to the 5-HT1a agonist ipsapirone or placebo (n = 10 in each subgroup). In Study 2 ipsapirone was compared to placebo during $2\frac{1}{2}$ hours of boredom in 20 males each. In both studies groups were divided according to questionnaire scores into high and low aggressives and testosterone, cortisol, and emotional states were assessed.

The major results showed

1. Induction of aggression increased testosterone and aggressive emotions and behavior, and this was more pronounced in high aggressive subjects.
2. The 5-HT agonist ipsapirone reduced testosterone, but this was less pronounced in high aggressives, and high testosterone responders showed more pronounced aggressive behavior. A cortisol increase upon ipsapirone only occured when high testosterone responders were exposed to aggression induction.
3. Subjects divided according to autoaggression and overt aggression showed opposite patterns of hormone responses.

Results are interpreted with respect to differences in pre- and postsynaptic sensitivity for 5-HT1a receptors related to hetero- and autoaggression and manifested by differences in testosterone and cortisol responses.

S41-3

COGNITIVE PSYCHOPHYSIOLOGY OF IMPULSIVITY AND LOSS OF CONTROL

R. Jouvent*, A. Pierson. *CNRS UMR 7593, Hôpital de la Salpêtrière, 75013 Paris, France*

The heterogeneity of depressive disorders genrates as many subtypes as clinical pictures encountered. For this raison, we characterized patients on phenomenological criteria and, in addition to the global score of depression, we considered negative (psychomotor retardation and blunted-affect) and positive (anxious agitation and impulsivity) symptomatology. These dimensions do not overlap with a specific clinical type of depression. In patients fulfilling the DSM III-R criteria for major depressive episode, we have shown that such opposed subgroups exhibited specific information processing characteristics, as indicated by ERP parameters. In a go-noge task, only anxious-agitated and impulsive (AAI) patients showed an abnormal activation (high CNV) during expectation of the stimulus which was not pertinent for the task (nogo condition) in comparison with retarded and blunted-affect (RBA) patients. In a choice forewarned reaction-time task with both stimuli each containing some part of the information necessary for giving the response, P3a amplitudes were reduced in all patients compared to controls whereas P3b components were reduced in RBA patients whereas only P1-N1peak-to-peak amplitudes were reduced in AAI. These differences in energetical processes may explain differences in speed of processing: a slow encoding of stimuli (P1 latency) and a prolonged processing of stimulus-response compatibility (after P3b) observed in all patients was compensated by a global velocity increase in decision making (P3b latency) in AAI patients or, the contrary, cumulated with its velocity decrease in RBA patients. The impairment in anxious-agitated patients seems to be limited to perceptual processes contrary to blunted-affect patients whose the multiple energitical deficits seem to indicate that they result from an impairment of a more general process such as effort. As a whole these results may explain the massive behavioral retardation observed in blunted-affect patients, as indicated by Rts, and contrary to anxious-agitated patientss who show normal reaction times. General considerations will be then developped, concerning extensive value of our results to various impulsive behaviors.

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