

schizophrenic offenders were investigated with respect to psychiatric and premorbid history and circumstances at the time of the offence. They were compared to 30 non-offender male schizophrenic inpatients, of whom 23 displayed violent behaviour during the index hospitalization while 7 did not show any aggressive behaviour even in their history. Patterns of social and professional achievement were poorest in the offender group and best in the never-violent group, while non-offender violent inpatients held a medium position. Offender patients had mean 7.4 previous psychiatric hospitalizations, previous convictions in 54%, alcohol abuse in 72% and previous assaultive behaviour in 85%. Unemployment was common with 85%, all subjects derived from low social levels and predominantly lived with their parents or alone, psychosocial stress factors in the year before the index offence were heavy or very heavy in 92%. Premorbid social adjustment, measured by the general part of the premorbid adjustment scale (PAS), was generally poor, the familiar background corresponding to the respective social level, but not generally extremely unfavourable and not characterized by habitual violence. The offender patients could be differentiated into two types: 7 patients with premorbid antisocial behaviour often were diagnosed as disorganized type of schizophrenia, were at young age at time of first psychiatric hospitalization (mean 18.4 yrs.) and index offence (mean 20.6 yrs.), had previous convictions in 100% and abused drugs in 74%. On the other hand, 18 patients without premorbid antisocial behaviour were all diagnosed as paranoid type of schizophrenia, were significantly older than the other group (mean 26.2 yrs. at first hospitalization and 36.4 yrs. at index offence) and had experienced social drift during the course of their illness. Drug abuse was rare among these patients, and all suffered from ideas of persecution or injury during the violent offence. *Conclusions:* Premorbid social adjustment, social adjustment during the course of illness as well as the illness itself play a major role in the origin of aggressive behaviour in schizophrenics. Two types of violent schizophrenics can be described with different impact of these three factors.

## NR19. Psychopharmacology and substance abuse

*Chairmen:* I Stolerman, D Ball

### ACUTE ETHANOL WITHDRAWAL IS ASSOCIATED WITH DECREASED STRIATAL DOPAMINE TRANSPORTER LEVELS?

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Dopamine levels have been suggested to play a role in alcohol withdrawal. In the present study, the effect of acute alcohol withdrawal on human dopamine (DA) transporters was investigated with SPECT using the ligand [123-I]2 $\beta$ -carbomethoxy-3 $\beta$ -(4-iodophenyl)tropane([123-I] $\beta$ -CIT) (MAP Medical Technologies Oy).

[123-I] $\beta$ -CIT binding to striatum was examined in 12 alcoholics (mean age 42 yrs, range 32–53) during withdrawal symptoms after a period of at least 2 weeks of heavy ethanol intake (140 g/day). Controls were healthy volunteers (mean age 36 yrs, range 21–51). Most of them were getting in the acute phase a large amount of benzodiazepines, but no other psychoterapics were given. Transporter levels were examined 1–4 days after cessation of ethanol intake and after four weeks of abstinence monitored by interviews and biochemical markers (serum desialotransferrin, CDT) and by urinary screening for narcotics. The first scans were taken one and four hours (serotonin transporter density) and the third scan one day after injection of the tracer (dopamine transporter density). Transaxial slices oriented in orbito-meatal (OM) line were reconstructed and the following regions were drawn: 1) medial prefrontal cortex (MFC), 2) striatum (STR) and 3) frontal white matter (FWM). ROIs were drawn using MRI. The following ratios were calculated: 1) MFC/FWM at one and four hours (serotonin transporter density) and 2) STR/FWM at one day (dopamine transporter density).

Dopamine transporter density was significantly higher after four weeks of abstinence (8.0) compared with withdrawal situation (7.3), ( $p < 0.01$ ). After four weeks abstinence the levels were similar to those of healthy controls (STR/FWM = 8.0;  $n = 15$ ). Both I-type and II-type alcoholics showed decreased density of striatal dopamine transporters. In contrast, no significant difference could be found in serotonin transporter density at one hour after injection of the tracer in medial prefrontal cortex (MFC/FWM) during withdrawal (1.18) and after four weeks of abstinence (1.12).

The present data indicates that decreased striatal dopamine activity may be an important mechanism of ethanol-induced withdrawal symptoms. However, the possible effect of benzodiazepines should be taken into consideration.

### MDMA (ECSTASY)-ABUSE IN YOUNG ADULTS — IS THERE A RISK PROFILE FOR SEVERE PSYCHIATRIC DISORDERS?

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*Introduction:* There has been a considerable increase in the use of Metampheteraminderivates such as MDMA in Western Europe. There exist only a few case reports on anxiety, depression and paranoia linked to MDMA in young adults.

*Objectives:* As a part of an epidemiological Study we tried to establish a risk profile for psychiatric disorders in so called recreational MDMA-users to be able to predict the probability of later psychiatric disorder in this group.

*Methods:* We examined 120 MDMA-users (mean age 17.6 y) with a semi-structured interview that had been tested in former studies. Apart from basic data it focuses on the personal ways of abuse and paranoal experiences during drug-intake and later on.

*Results:* 25% ( $n = 30$ ) of the adolescents reported hallucinations, anxiety and depression during and after MDMA-intake and in the time afterwards. The severity and duration of the symptoms was correlated both with amount and duration of drug-intake and to its social context. All 6 patients with psychosis-like symptoms took MDMA alone, longer than six months and as a sort of self-medication against depression.

*Conclusions:* These first qualitative data on the risk of psychiatric symptoms in recreational MDMA-users have to be reconfirmed by larger studies, although there still are major methodological and practical problems to be solved. But combined with the knowledge about clinical cases with MDMA-related disorders there seems to be some evidence that there is a certain subgroup of MDMA-users that are at a risk to develop severe psychiatric disorders.

Further epidemiological and clinical studies on this issue have to