

P54.08

Dopamine D2 receptors and transporters in type 1 and 2 alcoholics

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Objectives: Increasing evidence implies the involvement of the dopamine (DA) system in the pathogenesis of alcoholism.

Methods: We measured striatal DA D2 receptors in Cloninger type 1 and 2 alcoholics by using [¹²⁵I] epidepride in human postmortem whole hemispheric autoradiography.

Results: The DA D2 receptor density in the caudate was 24.1% lower in the type 1 alcoholics and 21.4% lower in the type 2 alcoholics when compared with the controls. The density in the putamen was 23.5% and 21% lower in the type 1 and type 2 alcoholics, respectively. In the lateral (32.6%) as well as medial (30.2%) globus pallidus only type 1 alcoholics had significantly lower densities. The number of DA D2 receptors and DAT had a significant positive correlation only in the putamen of type 1 alcoholics. The binding of [¹²⁵I] epidepride showed also consistent and statistically significant positive correlation between nucleus accumbens and all dorsal striatal areas in type 1 alcoholics but not in the two other groups.

Conclusions: Our results show, that these two subgroups of alcoholics have differences in their DA receptor binding characteristics.

P54.09

Korsakoff's psychosis: MHPG and cognitive symptoms under treatment with reboxetine

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Objective: This study was designed to investigate the hypothesis of a paraventricular cerebral noradrenaline deficiency in Alcoholic Korsakoff's Syndrome. In a randomised, open trial, the effect of a 4 week treatment with the selective NARI reboxetine on 1. the concentration of the noradrenaline metabolite MHPG in saliva (correlation of MHPG in saliva and CSF has been shown previously), and 2. changes in cognitive performance scores, measured by the Mini Mental Test (MMST), were investigated in 105 patients with a diagnosis of Korsakoff's Syndrome (ICD-10:F10.6).

Key findings:

- In the verum- as well as the control group there were similar increases in salivary MHPG and improvements in MMST scores which were not significantly different.
- A lower MHPG did not correlate with inferior cognitive performance scores.

Discussion: The hypothesis stating that an improvement in mestic performance and an increase in cerebral MHPGs results from noradrenergic stimulation of damaged neuronal projections is not supported by our findings. A conclusive model remains to be put forward.

P54.10

Alcohol dependence is associated with a NMDA-receptor 2B gene variant

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Ethanol-induced glutamatergic neurotransmission mediated by a NMDA-receptor-subunit (NR2B) has been shown to activate pathophysiological mechanisms of alcohol dependence. We performed an association study of alcohol dependence and a silent single nucleotide polymorphism (SNP) of the NR2B subunit leading to a C to T exchange at position 2873 of the gene (accession number XM 006636.2). 248 patients with alcohol dependence according to DSM IV criteria and 276 unrelated control subjects were included in the study. Our confirmatory result shows that the risk of alcohol dependence is significantly higher for individuals possessing genotype CC as compared to CT or TT ($p=0.0015$). Exploratory findings within the group of patients, provided evidence for an association of the CC-genotype with an index of severity of disease ($p=0.0224$) and for associations of the number of C-alleles with alcohol withdrawal symptoms ($p=0.0244$), antisocial personality traits ($p=0.0025$) and a positive family history ($p=0.0056$). We did not find an association of NR2B-genotype and age of onset, sex and psychiatric comorbidity. Our findings are of potential relevance the assessment of therapeutic response to anti-craving substances based on the NR2B genotype.

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The association between alcohol and suicide rate: results of time-series analysis

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In most European countries suicidal behavior is a major public health problem. The association between alcohol misuse and suicide rate is well documented. This paper deals with the comparative analysis of the dynamics in the level of alcohol consumption per capita and suicide rate in Belarus in 1970–1999. In the period 1970 to 1984 the suicide level increased from 17,6 to 29,5 per 100.00. In 1985, compared with 1984 the rate lowered from 29,5 to 23,1. In 1986, compared with 1984 the rate decline from 29,5 to 17,7. In the years 1987 to 1992 there was observed a steady growth in the suicide level from 19 to 23,5. In 1992 to 1999 the level increased from 23,5 to 35,3. The suicide rate increases simultaneously with the growing rate of alcohol consumption per capita and vice versa. Sharp decrease in the alcohol consumption level in the period of anti-alcohol campaign in 1985–1988 years was accompanied by an evident reduction of suicide rate. The results of the time-series analysis reveal positive association between the level of strong spirit consumption per capita and the suicide rate ($r=0,77^*$). It should be reasonable to conclude in this respect, that sharp increase of the suicide level, which occurred in 1990s, was to a great extent, accounted for by the altered structure of alcohol consumption. At that time the share of vodka made 80% in the total alcohol consumption structure. In 1980s-only 30%. Thus, in general, the results of the research prove the existence of positive association between the total level of alcohol consumption and the suicide rates. Moreover, the research findings show that the structure of alcohol consumption effects the suicide rate.