S51.05

Treatment-seeking gamblers and Parkinson's disease: Case reports

O. Simon. *Center for Pathological Gambling, Community Psychiatry Services, Department of Adult Psychiatry, University Hospital of Lausanne, Lausanne, Switzerland*

Pathological gambling (PG) is a rare but well-established behavioural disorders of Parkinson's disease (PD) patients treated with dopamine agonist. We investigate the chronological relationship between PD and diagnosis of PG within treatment-seeking gamblers.

Sample and Methods: From 174 consecutively admitted pathological gamblers we identified 4 patients with PD. Standardized medical records include socio-demographic characteristics, past gaming behaviours and gambling-treatment modalities as well as the evolution of PD and the pro-dopaminergic medication history.

Results: All four patients developed PG after the onset of PD treatment. Three patients described a period of chronic exposure to gaming facilities years before and after onset of pro-dopaminergic treatment, with occasional or regular gambling, but without a compulsive component. In one patient, PG appeared suddenly without any previous gaming behaviour after the onset of medication. Despite a high treatment motivation, gambling specific cognitive therapy was unsuccessful.(c) Implication for the Field

The relationship between PD and PG appears to be complex: Confounders such as psychosocial factors or increase in accessibility of gambling opportunities may account for these findings. This case series confirm that pro-dopaminergic treatment can induce PG behaviour, but may be more likely in ''at risk'' groups. These patients pose specific treatment challenges.

Symposium: The role of 5-HT1AR in pathophysiology and treatment of schizophrenia

S48.01

The postsynaptic 5-HT1A-receptor and its role for cognitive functions in mice

B. Bert, J. Rothe, H. Fink. *Freie Universität Berlin, School for Veterinary Medicine, Institute of Pharmacology and Toxicology, Berlin, Germany*

Schizophrenia is often accompanied by cognitive dysfunctions. Post-mortem and in vivo studies have revealed increased cortical 5-HT1A-receptor density and it was assumed that 5-HT1A-receptor active drugs could enhance cognition. Moreover, partial 5-HT1A-receptor agonists positively affected verbal memory in schizophrenic patients. However, the role of the 5-HT1A-receptor for cognition has not been fully clarified.

Recently, we have introduced transgenic mice overexpressing the 5-HT1A-receptor postsynaptically in the cortex and hippocampus. Function of the surplus receptors was verified by receptor activation with the agonist 8-OH-DPAT.

In this study we further investigated the role of postsynaptic 5-HT1A-receptors for cognition. Therefore, our mice were tested in the inhibitory avoidance, Morris water maze, and hole-board habituation task. Moreover, the effects of low and high doses of 8-OH-DPAT were examined in the inhibitory avoidance task.

Our transgenic mice showed no overall cognitive deficit. As a tendency, inhibitory avoidance retention was impaired in transgenic mice compared to wild-type controls. Both genotypes showed similar spatial learning abilities in the Morris water maze and habituated to the hole-board in a comparable manner. Anterograde amnesia induced by 8-OH-DPAT was in transgenic mice already apparent in a third of the dose used for wild-type mice. Retrograde amnesia could not be triggered.

Since the transgenic mice show untreated a rather normal behaviour, we assume that they possess compensatory mechanisms. However, after activation of the postsynaptic 5-HT1A-receptors the differences between wild-type and transgenic mice became more clear. Hence, our findings suggest that the cortical and hippocampal 5-HT1A-receptors play rather a modulatory role in learning.

S48.02

Effect of Serotonin-1A receptor on behavioral changes in animal model of schizophrenia-like behavior

V. Bubenikova-Valesova [1], M. Votava [2], T. Palenicek [1], J. Horacek [1,2], C. Hoschl [1,2]. [1] *Prague Psychiatric Center, Prague, Czech Republic* [2] *3rd Faculty of Medicine Charles University, Prague, Czech Republic*

Some antipsychotics act as partial agonists on serotonin-1A receptors (5-HT1AR) localized postsynaptically in cortex and hippocampus and presynaptically on the serotonergic cell bodies and dendrites in raphe nuclei.

Our study's aim was to investigate the effect of pre- and postsynaptic 5-HT1AR activation on MK-801 (0.1, 0.3 mg/kg)-induced sensorimotor gating deficits and hyperlocomotion in a rat model of schizophrenia-like behavior. To investigate the effect of presynaptic receptor activation we used a partial agonist (buspirone; 1,10 mg/kg) and a low dose of full agonist (8-OH-DPAT; 0.025 mg/kg). The effect on both pre- and postsynaptic receptors was investigated by a high dose of full agonist (8-OH-DPAT; 1 mg/kg).

We found that buspirone in both doses had no effect on MK-801-induced deficit in senzorimotor gating. Contrarily, the low dose of 8-OH-DPAT ameliorated the deficit. The MK-801-induced hyperlocomotion was decreased by buspirone as well as by the low dose of 8-OH-DPAT. Activation of both pre- and postsynaptic 5-HT1AR had an opposite effect on MK-801-induced behavior.

Our findings accord with the published results that partial 5-HT1AR agonists could be effective in schizophrenia treatment, but full potent agonists could exacerbate psychotic symptoms. Observed differences between buspirone and the low dose of 8-OH-DPAT could be due to inhibition of D2 receptor.

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S48.03

The influence of polymorphism for Serotonin 5HT-1A receptor on phenotypic variables in schizophrenia

J. Horacek [1,2,3], F. Spaniel [2], M. Brunovsky [3], T. Novak [2], B. Tislerova [2], M. Kopecek [3], P. Mohr [1], C. Hoschl [1,3]. [1] *Prague Psychiatric Center, Prague, Czech Republic* [2] *3rd Faculty of Medicine, Charles University, Prague, Czech Republic* [3] *Centre of Neuropsychiatric Studies, Prague, Czech Republic*

Dysfunction of the serotonin system has been implicated in schizophrenia. 5-HT1A and 5-HT2A serotonin receptors are involved in

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