PW01-230 - **[^{18}F]FALLYPRIDE PET MEASUREMENT OF STRIATAL AND EXTRASTRIATAL DOPAMINE $D_{2/3}$ RECEPTOR AVAILABILITY IN PATIENTS WITH ALCOHOL USE DISORDER**

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Aim: Dopaminergic pathways are implicated in motivational aspects of substance use disorders, and might contribute to withdrawal phenomena, as well as an increased long-term risk of relapse. Molecular imaging with positron emission tomography (PET) revealed reductions in the availability of binding sites for $D_{2/3}$receptor ligands in striatum of withdrawn abusers of cocaine; corresponding results in alcoholics have been inconsistent so far. In the present study, we used the $D_{2/3}$ligand [^{18}F]fallypride to investigate dynamic changes in receptor availability in the striatum of patients with alcohol use disorder before and after undergoing a detoxification protocol.

Methods: 18 male patients (mean age 44±5.3y) with alcohol use disorder were recruited and scanned with 180MBq [^{18}F]fallypride upon hospital admission, and again 1-2 weeks later after detoxification. The control group consisted of 10 age-matched healthy volunteers. PET acquisition time was 180min, consisting of 39 frames of increasing duration. Within each group binding potentials (BP_{ND}) were calculated in the striatum using the cerebellum as reference.

Results: In the patients, the mean BP_{ND} in whole striatum was 17.2±4.2 at baseline, with a trend towards a decline at follow-up. In addition there were inverse correlations of BP_{ND} with age (r-0.45) and with daily alcohol consumption (r-0.2). The age-dependence of BP_{ND} was less pronounced in healthy controls. However, mean striatal BP_{ND} was only slightly lower in the patient group. No pronounced group differences were evident for extrastriatal [^{18}F]fallypride binding.

Conclusions: Regressions with age suggest an accelerated loss of dopamine $D_{2/3}$ receptors in the striatum of subjects with alcohol use disorder.

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