

## FC03-02 - DEEP BRAIN STIMULATION OF THE NUCLEUS ACCUMBENS IN TREATMENT RESISTANT ALCOHOL ADDICTION - A NOVEL TREATMENT OPTION?

U. Mueller<sup>1</sup>, J. Voges<sup>2</sup>, I. Galazky<sup>3</sup>, M. Heldmann<sup>3</sup>, H.-J. Heinze<sup>3</sup>, V. Sturm<sup>4</sup>, B. Bogerts<sup>1</sup>

<sup>1</sup>Psychiatry, <sup>2</sup>Stereotactic Neurosurgery, <sup>3</sup>Neurology, University Hospitals Magdeburg, Magdeburg, <sup>4</sup>Clinic for Stereotaxy and Functional Neurosurgery, University Hospitals Cologne, Cologne, Germany

**Introduction:** Treatment of alcohol addiction remains challenging, since only half of all patients achieve long-term abstinence by currently available therapies.

**Objective:** In the last 2 years, there have been promising reports on deep brain stimulation (DBS) of NAc in addiction (animal models, one case report of a patient with severe anxiety disorder and secondary addiction). Our group treated 5 patients with treatment resistant alcohol addiction with DBS so far. Our initial data of the first 3 patients has just been published. However, these very positive results arise from a continuous open stimulation and have not been placebo controlled.

**Aims:** To assess the impact of discontinuation of bilateral DBS of the NAc on craving for alcohol in patients whose addiction remitted after initiation of DBS.

**Methods:** Crossover, double-blinded phase of 2x4 weeks with sham-stimulation in one and stimulation in the other 4 weeks.

**Results:** Until now, one patient finished the 8 weeks of study (remaining patients will finish experiment in December 2009). In this patient, stimulation was continued in the first and stopped in the latter 4 weeks. While he experienced no changes or side effects in the first part, he showed a massive craving for alcohol one day after discontinuation, which again remitted when the experiment was stopped and the stimulator was turned on again after 3 days.

**Conclusions:** DBS of NAc seems to selectively alleviate craving for alcohol thus enabling patients to remain abstinent. These results justify clinical studies in larger samples of patients with treatment resistant alcohol addiction.