randomised trial data are not compelling and there are no controlled studies with newer anti-depressant agents such as SSRIs. There has been recent interest in the augmenting action of pindolol, because animal experimental studies suggest that certain β-adrenoceptor antagonists can enhance the effects of SSRIs on serotonin neurotransmission through 5-HT1A autoreceptor blockade. However, clinical data from controlled trials are not encouraging and PET imaging indicates that the dose of pindolol generally employed in SSRI augmentation studies (7.5mg daily) is probably insufficient to occupy human 5-HT1A receptors. Recently atypical antipsychotic drugs have been used as SSRI augmenting agents with olanzapine producing clinically useful effects in one small controlled trial.

### IS01.3
An overview of the antidepressant properties of transcranial magnetic stimulation

T.E. Schlaepfer*, M. Kosel, C. Frick-Schröter, H.-U. Fisch. *University Hospital Bern, Department of Psychiatry, Psychiatric Neuroimaging Group, Switzerland*

The possibility of focal and noninvasive stimulation of the brain has been an appealing vision that for a couple of years seems to be realized: Repetitive Transcranial magnetic stimulation (rTMS) holds promise as a tool to study localization of function, connectivity of brain regions, and pathophysiology of neuro-psychiatric disorders. Transcranial magnetic stimulation involves placing an electromagnetic coil on the scalp. High-intensity cur-rent is rapidly turned on and off in the coil through the discharge of capacitors. This produces a time-varying magnetic field that lasts for about 100 to 200 microseconds. The magnetic field typically has a strength of about 2 Tesla (40 000 times the earth's magnetic field, or about the same intensity as the static magnetic field used in clinical magnetic resonance imaging).

This technique has been used in Neurology as an investigative tool for more than a decade, but as potential effects on mood have become apparent, interest has grown in its use in treatment and assessment of major depression. Since the technique is non-invasive and can be applied to a non-anesthetized patient it would be extremely promising as an antidepressant modality, since other methods of therapeutic brain stimulation such as electroconvulsive therapy (ECT) are much more invasive.

### IS01.4
Vagus nerve stimulation: a potential new treatment for treatment resistant depression?

A. Zobel*, J. Wellmer, N. Freymann, W. Maier. *University of Bonn, Department of Psychiatry, Germany*

Because of the fact that up to 20 % of depressed patients do not respond to the currently available therapies, new treatment options are desirable.

Subjective observations from treatment of patients with epilepsy leaded to the idea that vagus nerv stimulation (VNS) has antidepressive effects. Although the basic mechanism of action of VNS is unknown, both clinical and animal studies indicate a mechanism that is likely to affect the same neurotransmitter systems that are thought to be involved in depression. Furthermore PET scan data showed modulations of cerebral blood flow in humans in key brain structures for depression. An american randomized open-label trial study with 30 patients confirmed these first suggestions and demonstrated a 40% response rate.

We now investigate the first treatment refractory depressed patients in Europe in an open label, non-randomized multi-center

study. In addition to weekly psychopathometric ratings we investigate the reactivity of the HPA system using the combined dex/CRH test and the cerebral perfusion performing HMPAO-SPECTs after one and after four weeks of stimulation for monitoring neurobiological parameters of depression under VNS treatment. Preliminary data will be presented.

---

# S01. Major European research networks on schizophrenia

*Chairs*: W. Gaebel (D), H.-J. Möller (D)

### S01.1
The German Network Research on Schizophrenia

W. Gaebel*, W. Wölwer. *Department of Psychiatry, University of Düsseldorf, Germany*

The German Research Network On Schizophrenia is one of three psychiatric "Competence Networks" funded by the German Ministry of Education and Research in order to improve the horizontal and vertical collaboration between research institutions and the psychiatric care system. The schizophrenia network is organized, with respect to illness development, into two main "Project Networks" (PN), focussing primarily on the treatment and need for care in the prodromal phase preceeding the first episode (PN I), and after first hospitalization (PN II). In total, about 30 research projects aim at the improvement of early detection and intervention (PN I), or at the optimization of acute and long-term treatment, especially in first episode patients, including rehabilitation strategies, especially in patients with residual symptoms (PN II). Furthermore, there is a "Special Network" on molecular genetics, together with several more general projects on health economy, fighting stigma and discrimination, postgraduate training, quality assurance, and methodology. More than 20 psychiatric university departments, 14 state hospitals, six psychiatric and primary care networks, and further organizations like self-help associations of relatives collaborate in the network.

### S01.2
The Swedish HUBIN Project on Schizophrenia

G. Sedvall[1], R. Adolfsson[2], I. Agartz[1], S. Arnborg[3], B. Ekholm[1], H. Hall[1], E. Jonsson[1], T.F. McNeil[4], G. Okugawa[5], U. Osby[1], M.J. Owen[6], L. Terenius[1]. [1]*Department of Clinical Neuroscience, Karolinska Institutet, Stockholm;* [2]*Department of Psychiatry, Umea University Hospital, Umea;* [3]*NADA, KTH, Stockholm;* [4]*Department of Epidemiology, Malmö University Hospital, Sweden* [5]*Department of Neuropsychiatry, Kansai Medical University, Osaka, Japan* [6]*UWCM, Department of Psychological Medicine, Cardiff, Wales, UK*

The HUBIN (Human Brain Informatics) project is a national interdisciplinary collaborative effort to explore genetic and environmental mechanisms involved in the etiology and pathophysiology in Swedish patients with schizophrenia. Two different subject materials are used in this approach. The first is a case-control material of subjects from the Stockholm area. The second is a unique Swedish material of sib-pairs with schizophrenia. Standard electronic protocols are used to determine, (1) perinatal risk factors from birth records, (2) phenotypic characteristics of the disorder,