

diagnostic criteria for PTED. Patients also filled in the Symptom-Checklist-90-Revision (SCL-90-R), and the Impact of Event Scale (IES-R). These patients were compared with 48 other nonselected patients who suffering from other mental disorders and were matched for gender and age.

**Results:** In comparison to controls, PTED patients showed according to the MINI standardized psychiatric interview a grater variety of other mental disorders. They were more severe ill, showed prominent emotional features such as embitterment, aggression or hopelessness, higher scores on the impact of event scale and the Bern Embitterment Scale, and showed less treatment response.

**Conclusion:** PTED is a disorder that goes along with immense subjective distress and chronicity, has specific clinical features which allow PTED to be discriminated from other mental disorders, and shows less favorable treatment response.

### O-06-08

Capability assessment of somatoform disorders

C. Stadtland, H. Gündel. *Psychiatric Hospital of the University of Munich, Munich, Germany*

**Objective:** There exists a high risk that patients suffering from a somatoform disorder will be awarded a disability pension. The aim of this study was to identify the prognostic risk factors.

**Methods:** The data of 226 subjects suffering from somatoform disorders was analyzed retrospectively using 73 factors which were derived from a literature search. The outcome was achieved by evaluating interviews with 100 participants, who had given their informed consent, over a mean follow up period of 4.8 years.

**Results:** Only a few factors correlated with the subsequent awarding of a disability pension. The individuals who had been awarded for a disability pension were older, less motivated regarding their job and their application for a disability pension was more often supported by their employers. Their attitudes were generally more pessimistic and they felt less capable than non-pensioned off subjects.

**Conclusion:** Our data supports a bio-psycho-social model of the awarding of disability pensions in functional somatic syndromes.

### O-06-09

Features of psychoemotional stress factors preceding the beginning of psychosomatic diseases

P. Sidorov, A. Soloviev. *Northern Medical University, Arkhangelsk, Russia*

**Objective:** Revealing of features of psychosomatic stress factors preceding the beginning of psychosomatic diseases.

**Methods:** 590 patients were examined (190 men and 400 women); 99 of them had a diagnosis of ischemic heart disease (IHD), 96 - arterial hypertension (AH), 84 - diabetes mellitus type 1 (DM1), 91 - diabetes mellitus type 2 (DM2), 60 - duodenum ulcerous disease (UD), 52 - bronchial asthma (BA). A separate group was formed of 108 elderly patients (60-80 y.o.) who had several psychosomatic diseases (AH, IHD, DM). The average age (excluding elderly patients) was  $46.95 \pm 1.38$  y.o.

**Results:** The analysis of psychotraumatic factors preceding the beginning of psychosomatic diseases showed that they took place in more than 4/5 of the patients. In the patients with AH, these factors were the most significant ones (98.1%), with DM 1

– the least significant (84.5%). The most frequent stress factors preceding a disease were relatives' death or diseases and family problems. By the analysis of the structure of the stress factors it has been revealed that by AH, DM 1, BA and UD, the leading factors were family problems, and by IHD, DM 2 and in the group of elderly patients – relatives' death or diseases. For women with psychosomatic diseases, stresses were more connected with the family sphere, and for men – with the professional sphere. The negative link of psychotraumatic factors with the patients' age ( $r = -0.58$ ) has been revealed, what can be evident of the lowering of the role of psychoemotional stresses in a disease debut with the age increase. With the age increase, the rise of a factor role – relatives' death or disease ( $r = 0.71$ ) was registered, what probably is connected with the natural age increase of stresses like this.

**Conclusion:** For most of the psychosomatic patients, high significance of psychotraumatic factors in a disease debut was peculiar what confirms their psychosomatic nature and the necessity of rendering psychotherapeutic aid to patients together with therapy.

### O-06-10

Disability and quality of life in somatoform disorders

D. Nutzinger, R. Brandmaier. *Psychosomatische Klinik, Bad Bramstedt, Germany*

**Objective:** The presentation will focus on the the impact of Somatoform Disorders (SD) on functioning and well-being and on the relevance of these dimensions for treatment outcome in 373 patients with SD. Three main questions are addressed: 1) how impaired are patients with SD in daily functioning and quality of life (QOL), 2) are there differences between the individual SD and 3) how useful is the construct of QOL as measure of treatment outcome.

**Methods:** 373 patients with different SD - 254 with Somatization Disorder, 103 with Hypochondriasis and 42 with Conversion Disorders – and a matched control group of depressed patients were assessed at the beginning and at the end of a behavioural treatment program using a battery of clinical scales for major clinical dimensions of somatization, anxiety, depression and disability; diagnoses were made according to DSM IV by using semi-structured clinical interviews; QOL was assessed with the SF-36.

**Results:** The results showed an enormous negative impact of somatization on QOL and functioning in comparison to a matched control group of depressed patients. A great difference in QOL indices emerged between the individual SD's with somatizing patients as the most impaired group showing significant improvement during therapy; in Conversion Disorders the profile of impairment on SF36 subscales was different and in this group treatment effects on QOL were modest.

**Conclusion:** Patients with SD are severely impaired in functioning and QOL; the profiles of these variables as well as their improvement during treatment differ within SD's. The data also demonstrate that QOL is an important complementary measure of treatment outcome.

Wednesday, April 6, 2005

## O-10. Oral presentation: Anxiety-related and eating disorders

**Chairperson(s):** George Christodoulou (Athens, Greece),  
Stefano Pini (Pisa, Italy)  
08.30 - 10.00, Holiday Inn - Room 7

### O-10-01

A retrospective and prospective study of delayed sleep-phase shift in patients with severe, chronic obsessive-compulsive disorder (OCD)

L. Drummond, N. A. Fineberg, S. Mukhopadhyay, J. Turner, H. Ghodse. *St Georges Hospital Medical School Mental Health, London, United Kingdom*

**Objective:** Bobdey et al (2001) described a group of non-depressed OCD patients who subjectively reported phase shifted sleep patterns. We performed a retrospective case note and a prospective study of sleep patterns of all OCD patients admitted to a specialist Unit.

**Methods:** Retrospective Study Case notes of consecutive admissions for 5 years were examined. The nurses' record of sleep was examined. Age, gender, duration, severity of illness, history of substance misuse and prescribed medication were noted. Prospective Study Consecutive admissions to an IP unit with OCD were asked to participate. Patients' sleep patterns were recorded by nurses for 5 nights. Measures of OCD, depression, sleep and demographic data were recorded

**Results:** Retrospective 123 files were evaluated and nursing sleep reports were found in all (100%). 21 patients (17.1%) demonstrated delayed sleep-phase shift, 28 (22.8%) other sleep disturbance and 51 (41.4%) no abnormalities of sleep. Patients with delayed sleep were younger and more likely to be male Prospective 20 of 23 consecutive admissions consented. Half of these showed delayed sleep. 8 of the 10 patients with delayed sleep were male (equal sex ratio for others). Patients with delayed sleep had significantly more severe OCD symptomatology.

**Conclusion:** In a specialist OCD inpatient unit, a retrospective study identified 17.1% and the prospective study, 50% of patients having delayed sleep. This is much higher than in the general population (0.17%-0.72%; Schrader et al., 1993). The affected patients were likely to be male, younger, earlier onset and more severe OCD symptoms. We suggest these patients form a small but clinically important sub-group of OCD. Further studies may yield insight into aetiology.

### O-10-02

Typical and atypical neuroleptics in the treatment of obsessive-compulsive symptoms in schizophrenia patients

I. Reznik, M. Reznik, A. Weizman. *Bat-Yam, Israel*

**Objective:** Current therapeutic approaches to obsessive-compulsive (OC) symptoms in schizophrenia patients are based on usage of neuroleptics (classical and atypical), as a sole agents or in combination with serotonin reuptake inhibitors (SRI's - selective and non-selective). There is obvious lack of systematic studies, providing therapeutic guidelines to OC symptoms in schizophrenia. In this paper we present newly elaborated clinical typology and classification of OC symptoms in schizophrenic patients that will clarify some diagnostic unclarity of this disorder and could predict the response of OC and psychotic symptoms on typical and atypical antipsychotic agents.

**Methods:** Based on our model of the clinical typology, as well as on contemporary literature on this topic and our wide experience with atypical antipsychotic agents (clozapine, risperidone, olanzapine and ziprasidone) and classical ones (perphenazine and haloperidol) as sole agents and in combination with SRI's, we tried to figure out the predictors of response of OC and schizophrenia symptoms on neuroleptic medications.

**Results:** We found some clinical and pathophysiological factors that could serve as such predictors.

**Conclusion:** Further investigations are needed to substantiate our observations and to elaborate the most effective and safe therapeutic approaches to these difficult-to-treat group.

### O-10-03

Overnight metyrapone tests in patients with panic disorder

M. Kellner, M. Schick, A. Yassouridis, T. Struttmann, K. Wiedemann, B. Alm. *UKE Hamburg Psychiatrie und Psychotherapie, Hamburg, Germany*

**Objective:** Data about the hypothalamic secretion of corticotropin-releasing hormone (CRH) in panic disorder patients in the non-panic state (using CRH tests) are contradictory. So far, no study about the response of the hypothalamic-pituitary-adrenocortical (HPA) axis to metyrapone (as an indirect measure of hypothalamic CRH release) has been published in panic patients.

**Methods:** In 14 patients with panic disorder (DSM-IV) and in 14 healthy matched control subjects a standard overnight metyrapone test (2,000-3,000 mg at 24:00) and in addition a combined metyrapone-low dose dexamethasone test (0.5 mg at 23:00) was performed in a single-blind design in fixed order. Plasma concentrations of adrenocorticotrophic hormone (ACTH), cortisol and 11-deoxycortisol were measured repeatedly on the following mornings from 08:00 to 08:30. Statistical analyses were performed using MANOVA.

**Results:** Significant treatment effects of metyrapone and of combined metyrapone/dexamethasone on ACTH, cortisol and 11-deoxycortisol concentrations were found. However, no group effects between panic patients and controls emerged. Considering depression, anxiety, tension and restlessness as covariates, no group effects were detected either.

**Conclusion:** Our data do not support a hypersecretion of hypothalamic CRH in panic patients in the non-panic state. In addition, no altered glucocorticoid negative feedback activity was found. Studies with metyrapone using different time frames are needed.

### O-10-04

Peripheral-type benzodiazepine receptor binding sites in platelets of patients with panic disorder associated to separation anxiety symptoms

S. Pini, C. Martini, M. Abelli, M. Muti, M. Preve, M. Montali, B. Chelli, A. Lucacchini, G. B. Cassano. *University of Pisa Department of Psychiatry, Pisa, Italy*

**Objective:** Rationale: Although it is still a matter of debate whether panic disorder (PD) and separation anxiety (SA) are associated or causally linked disorders, this latter domain has been included in the panic-agoraphobic spectrum as a dimension that could better characterize a more specific PD subtype. A decrease of

peripheral-type benzodiazepine receptor (PBR) has been demonstrated in several psychiatric disorders including PD. Objectives: the aim of the present study was to evaluate the kinetic binding parameters of the specific PBR ligand, PK 11195, in platelets from patients with PD in relation to the presence and severity of adulthood SA.

**Methods:** Using the specific radioligand, [3H] PK 11195, the kinetic binding parameters of PBR were determined on platelet membranes of twenty seven adult outpatients with a DSM-IV diagnosis of PD, assessed with the SCID-I, the Panic Disorder Severity Scale, the Structured Clinical Interview for Separation Anxiety Symptoms and the Adult Separation Anxiety Checklist and of eighteen healthy volunteers, recruited as controls.

**Results:** A significant decrease in PBR density was observed in PD patients as compared to controls. However, only the group of PD patients who also fulfilled the DSM-IV criteria for adult SA disorder showed a significant reduction of PBR. Significant and negative correlations between PBR density and each of the two SA scales total scores were also found.

**Conclusion:** The decrease of PBR density in platelets of patients with PD is significantly associated with the presence of SA symptoms, therefore PBR expression might become an useful biological marker of this dimension.

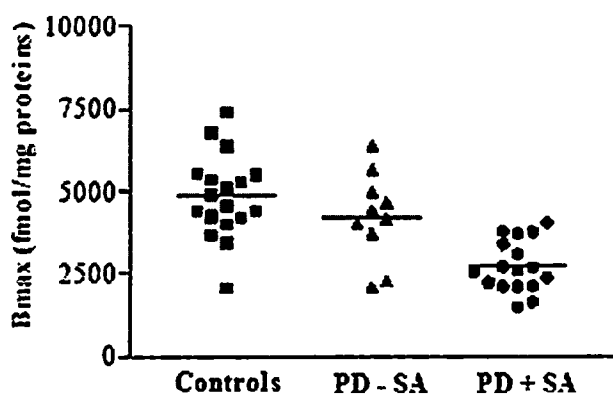


Figure 1. Scattergrams of Individual Bmax Values of [3H] PK 11195 Binding to Platelet Membranes from Controls and Panic Disorder (PD) Patients with or without Separation Anxiety (SA).

Each point represents an individual subject. Bmax values from controls (■), PD patients with Separation Anxiety (PD + AS) (●) or without Separation Anxiety (PD - AS) (▲) were obtained by Scatchard analysis of saturation isotherm.

### O-10-05

Aripiprazol as main treatment of the obsessive-compulsive symptoms

J. R. Lippi. *CIOPE Mental Health, Belo Horizonte, Brazil*

**Objective:** To test a new drug in the obsessive-compulsive symptoms.

**Methods:** The compulsive obsessive Syndrome is known there is more than 300 years. We gathered a group of patients for clinical observation and therapeutic answer. The obsessive symptoms (thoughts, pulses, ideas and images) compulsive (repetitive behaviors) they are some of the ones that they offer the

largest difficulty for the treatment in psychiatry. So much in the main Syndrome, as in the co-morbidities, these symptoms offer unpleasant consequences. So much of the physical, psychic, as relational point of view, the compromising is serious and uncomfortable. Like this, repetitive acts that are tiresome, physics, mental and relationship, offer, equally, vexatious situations when done in the presence of third and people, sometimes, strangers.

**Results:** To find effective treatments is being one of the great needs of the psychiatry. We know about the value of Clorimipramine and ISSR. We believed that the antipsychotics of third generation can help us in the treatment interdisciplinary. We treated 15 patients with pathologies several such as Syndromes of Leopard and Gilles de La Tourette, Schizophrenia, among others, but where they were the symptoms common of obsession-compulsion. The results were surprisingly good, with the Aripiprazol, in a medium time of 06 months, with the medium dosage of 15mgs/dia.

**Conclusion:** The results of experiment gotten through the psychopharmacotherapy, with the use of Aripiprazol in the medium dose of 15mg/day revealed effectiveness and allies to the psychotherapy and /or therapy cognitive-behavioral, they are encouraging.

### O-10-06

Social phobia symptoms and comorbidity with specific phobia: a study of 850 Israeli young soldiers

I. Iancu. *Beer Yaakov Hospital Psychiatry B, Beer Yaakov, Israel*

**Objective:** Social Phobia (SP) and Specific Phobia are highly prevalent disorders and there is a high comorbidity rate. The aims of this study were to assess the prevalence of SP and Specific Phobia symptomatology in a non-clinical sample of Israeli young adults.

**Methods:** 850 young soldiers from the Israel Defense Forces (IDF) participated in our study. Measures included the Liebowitz Social Anxiety Scale (LSAS; self-report version), a self-report questionnaire on specific phobias and a socio-demographic questionnaire. Data on Specific Fears representing DSM-IV-TR Specific Phobias were analyzed to evaluate their prevalence, the comorbidity rate with SP symptomatology and to characterize socio-demographic correlates.

**Results:** SP symptomatology was reported by a great percentage of the subjects, as displayed by the rather high mean LSAS scores in this non-clinical sample ( $\approx 29$ ). Overall, 4.5% of the sample scored as SP positive according to our cutoff score (LSAS score  $> 79$ ). The prevalence of fears and phobias in our sample was 49.1% and 8.7% respectively. The most frequent fears and phobias were from animals, heights, injury and closed places. Also, we found a significant positive correlation between the number of phobias and the LSAS score. Those with positive SP (LSAS  $> 79$ ) had a 50% chance of having also a specific phobia. The following variables were accompanied by a higher number of phobias: male gender, role of soldier (mechanic), no matriculation exams, not being presently involved in a romantic relationship, not having at least two good friends, mental treatment before enlistment, mental treatment during the military service and receiving psychotropic medications in the past.

**Conclusion:** Our findings corroborate findings from other studies in the Western world, regarding both the high prevalence of SP symptoms and specific phobias as well as the high comorbidity rate among the two disorders.

### O-10-07

Leptin and leptin-receptor of inpatients with anorexia nervosa in progression of treatment

G. Ristow, A. Maras, C. Goepel, M. H. Schmidt, C. Goepel. *Zentr. Instiut f. See. Gesundh Kinder- und Jugendpsychiatrie, Mannheim, Germany*

**Objective:** Leptin (lep) and soluble leptin-receptor (slep-rec) are metabolites of energy and adipose metabolism excreted by adipocytes. There is a discussion about the influence of these metabolites on development and progress of eating disorders. A positive correlation between leptin and BMI is described for patients with anorexia nervosa (AN). There are rare data for slep-rec of adolescent AN-patients. Target of our investigation is the influence of lep and slep-rec on course of treatment by patients with AN.

**Methods:** The study includes 15 patients (mean-age 14,7 y., mean-BMI at start 14,8). Lep and slep-rec are investigated at start of inpatient treatment (t0), at second day of 50% weight gain (t1) and at destination weight (t2). In addition we explored psychopathology by using an eating disorder inventory (edi-2). Coherence of variables BMI, time of treatment and edi-2 are calculated. A control group of 11 healthy girls was also investigated. In a one year follow-up investigation we looked for relapse of patients.

**Results:** Under progression of treatment we found a significant elevation of lep from t0 over t1 to t2. A significant decrease of lep-rec from t0 to t2 was found as well. Another result was correlation between lep and bmi and between and lep-rec and bmi. Nonetheless only few coherences between biological parameters and psychopathology could be assessed. In comparison with healthy controls there was a discrete but non significant elevation of lep at t2. There was a relapse-rate of 50% and a significant correlation to lep-rec at t1.

**Conclusion:** Level of lep and lep-rec are modifying under weight gain. For lep we find negative coherences to subscales of edi-2, which can be interpreted as a hint for severity code of illness. Level of lep at t2 allows no conclusion for relapse of patients while leptin-receptor at t1 shows correlations to relapse.

### O-10-08

Brief hospitalization plus outpatient group therapy in bulimia nervosa: Analysis of the effectiveness of a combined therapy

F. Fernandez-Aranda, A. Badia, R. Solano, J. Vallejo Ruiloba. *University Hospital of Bellvit, Barcelona, Spain*

**Objective:** The purpose of the current study was to determine the efficacy of a combined treatment (brief inpatient treatment – BIT- plus a short outpatient therapy -CBT-) in Bulimia nervosa (BN).

**Methods:** 100 treated BN patients, diagnosed according to the DSM-IV criteria, participated in this study. All were female. The

whole patients were consecutively assigned to two different therapy conditions: (1) Combined therapy (brief inpatient (BIT) + shorter outpatient CBT) or (2) standardized outpatient CBT. Both groups were compared to 50 BN patients on the waiting list (WL). Prior, after the treatment and at 6 to 12 months follow-up several clinical and psychometrical measures were used for the assessment.

**Results:** ANOVA was computed to examine therapy effectiveness. Significant reductions in bingeing and vomiting frequency as well as in psychopathological traits, were found at the end of both therapy conditions (BIT+ shorter CBT group or standardized CBT group), however no improvements were found in the WL. After both therapy options, an abstinence rate on bingeing-vomiting episodes between 64,8% and 73,5% were found ( $p < .001$ ). However, there was no significant main effect according to the type of treatment ( $p > .05$ ).

**Conclusion:** Our findings suggest that such a combined therapy is effective for treating BN when compared to a longer outpatient CBT. Due to time-economical reasons this approach should be considered in further therapy programs with this type of patients. Supported by FIS (G03-184)

### O-10-09

The effect appraisal of profilactics of nutrition disturbances project

K. Bargiel-Matusiewicz, K. Kucia. *Medical University of Silesia Dept. of Psychology, Katowice, Poland*

**Objective:** Over half of girls and women see themselves as obese. It is connected with the ideal of slimness, predominating in our culture. The consequences of this growing cult of slimness involve more and more frequent disturbances of nutrition. The problems being the basis for obesity, anorexia and bulimia cannot be reduced merely to nutrition, weight and body size issues. The aim of the project is profilactic action concerning nutrition disturbances.

**Methods:** The project is addressed to the girls aged around fourteen. The programme comprises eight meetings devoted to the issues that according to current knowledge constitute a significant element of the process of building positive image of self, creating a feeling of one's individuality and developing ability of giving independent opinions. The aim of the classes is also paying attention at the health aspect of our nutrition. The concentration upon health helps maintaining optimum weight. The Questionnaire of Self Esteem and the Questionnaire of Appraisal of Prohealth Approach have been used in the research.

**Results:** Average results obtained in the above mentioned questionnaires have been compared, before starting the profilactic programme and after its completion. The test for two averages has been applied with this purpose (Level of statistical significance 0.001). Increase of the level of self esteem as well as of prohealth attitude has been confirmed.

**Conclusion:** The presented Profilactics of Nutrition Disturbances Project contributes to improvement of self esteem and to strenghtening of pro-health attitude. The girls taking part in profilactics classes are becoming more and more conscious of their strong sides.

**O-10-10**

Body image and suicidality among youth

M. Pompili, P. Girardi, A. Ruberto, R. Tatarelli. *University of Rome Psychiatry - Santi Andrea Hosp, Rome, Italy*

**Objective:** Attitudes and feelings toward the body may be a source of pleasure and well-being; on the other hand bodily dissatisfaction may lead to suffering, depression and even to suicide.

**Methods:** The study population consisted of 500 university students (190 males, 310 females); mean age of participants was 21.62 (SD=2.70). Participants were assessed by means of the Body Uneasiness Test (BUT), the Reason for Living Inventory (RFL), Zung Self Depression Scale (SDS).

**Results:** Data underline a linear relationship between uneasiness linked to body image and suicide risk. Such evidence suggests that only a serious disorder of the body image may be linked to an increased suicide risk. In our sample the increased suicide risk was due to primary depressive disorders or depression caused by the body uneasiness, which in turn is worsened by depression. Our results show significant gender differences for the body image and a moderate relationship between body uneasiness and depression.

**Conclusion:** Body uneasiness is a source of great distress among non-clinical young individuals, causing depression and even increase of suicide risk.

Sunday, April 3, 2005

## P-05. Poster session: Anxiety-related disorders

*Chairperson(s):* Donatella Marazziti (Pisa, Italy), Stuart Montgomery (London, United Kingdom)  
18.00 - 19.30, Gasteig - Foyers

**P-05-01**

Effects of the metabotropic glutamate type II receptor agonist LY544344 on panic anxiety induced by cholecystokinin tetrapeptide in healthy volunteers

M. Kellner, C. Muhtz, A. Yassouridis, K. Stark, J. Arlt, K. Wiedemann. *UKE Hamburg Psychiatrie und Psychotherapie, Hamburg, Germany*

**Objective:** Preclinical studies have repeatedly shown an anxiolytic-like action of type II metabotropic glutamate receptor agonists, such as LY544344 and LY354740. We tested whether LY544344, a prodrug of LY354740, would 1) reduce cholecystokinin tetrapeptide (CCK-4)-induced panic anxiety and 2) reduce CCK-4 activated stress hormone secretion in normal man.

**Methods:** Twelve healthy male volunteers were treated with LY544344 (80 mg bid po) or placebo for one week each in a double blind, randomized crossover design, with a two-week washout between treatment periods. On day 8 of each treatment period, CCK-4 challenges (50 µg iv bolus) were performed at 11:00. Panic and anxiety were assessed by panic questionnaires and visual

analogue scales for anxiety and tension. Adrenocorticotrophic hormone (ACTH) and cortisol levels were measured from 10:30 until 13:00.

**Results:** Analysis of variance did not show an overall significant main effect for treatment. However, in the 10 subjects who had a lower CCK-4 elicited ACTH release following LY544344 vs. placebo treatment, significantly fewer CCK-4-induced panic symptoms and significantly lower anxiety ratings were detected.

**Conclusion:** Our preliminary results suggest that additional studies with a larger number of study subjects are needed to further clarify the potential of the metabotropic glutamate type II receptor agonist LY544344 as a new anxiolytic or anti-panic drug in humans.

**P-05-02**

Modulation of the autonomic nervous system during CCK-4 challenge

J. C. Arlt, M. Kellner, H. Jahn, T. Raedler, A. Yassouridis, K. Wiedemann. *Univers.klinik Hamburg-Eppend. Kl. f. Psychiatr. u. Psychoth., Hamburg, Germany*

**Objective:** By the method of HRV we examined the effects of CCK-4 regarding to the ANS with healthy male volunteers. CCK-4 is a panic provoking agent with a rapid onset of typical symptoms. The presumably central effects on HR are short(1-2 min.), so that investigation of HRV likely reveals autonomic effects independent from psychopathology or endocrinology.

**Methods:** 19 healthy male volunteers (30.0 +/-1.5) obtained a CCK-4-bolus injection of 50 µg at 11:00, after an intravenous cannula was inserted into a forearm vein at 9:00. ECG was continuously recorded by a digital Medilog AR-12 holter equipment (Oxford instruments). Blood pressure was monitored sphygmomanometrically in distinct intervals. A HRV analysis was performed after exclusion of ECG arrhythmias and artefacts and certain measurements of the standard and frequency domain were calculated from 1-min segments. Three time intervals were extracted from the entire data sampling period: Before injection (Pre), immediately after injection (Bolus) and thereafter(Post).

**Results:** The following effects after CCK-4 bolus were observed (all values as ML): We found a high correlation of RMSSD and pNN50 to the HF component (Fig. 2). These results indicate a loss of parasympathetic tone: RMSSD decreased by 38.2%, pNN50 even by 56.4%, HF by 42.3% (Fig. 2) and HF norm by 23.0% (Fig. 1). The rise of the so-called sympathovagal balance (LF/HF) by 50.3% indicated a shift from vagal to sympathetic activity (Fig. 3). Furthermore we observed an activation of sympathetic tone, represented in LF norm, which was enhanced by 9.7% after CCK-4 administration (Fig. 1). In addition a rapidly increasing HR by 40.2% was found, which was accompanied by a simultaneous decrease of TP by 27.3% (Fig. 3).

**Conclusion:** Our results of a lowered vagal tone and a sympathetic activation by administration of 50 µg CCK-4 (Fig. 1) supports the notion, that also panic attacks could be associated with alterations of the ANS independent from psychopathology. Also a higher cardiovascular risk because of alterations of the ANS can be assumed. Further studies in panic patients are warranted.