Background Alcohol abuse is connected with higher frequency of cardiovascular diseases and their fatal complications. Pregnancy proteins are new and non-traditional markers related to vascular damage and cardiovascular risk. Pregnancy-associated plasma protein A (PAPP-A) is a zinc-binding metalloproteinase and placental growth factor (PIGF) is a member of the vascular endothelial growth factor family. The aim of the study was to evaluate PAPP-A and PIGF in patients with chronic alcohol abuse and their change after 3 months hospital inpatient alcohol treatment based on group and individual therapy.

Methods. The studied group consisted of 11 patients with chronic alcohol abuse (7 men and 4 women, mean age 38 ± 8 years). A group of healthy controls was used for comparison. PAPP-A was measured by TRACE (time-resolved amplified cryptate emission) and PIGF by ELISA (enzyme-linked immunosorbent assay).

Results. PAPP-A was significantly increased in chronic alcoholics before treatment compared with controls (12.4 ± 3.1 vs. 8.1 ± 1.8 pg/ml, P < 0.0001) and decreased significantly after the treatment (9.3 ± 2.8 pg/ml, P = 0.014 vs. before treatment, not significant vs. controls). PAPP-A did not differ between alcoholics and controls and was not influenced by the treatment (10.5 ± 3.7 mlU/l before treatment, 9.5 ± 2.4 mlU/l after treatment). PIGF in alcoholics did not correlate with PAPP-A, neither before nor after treatment.

Conclusion. PIGF, a new marker related to cardiovascular risk, is significantly increased in chronic alcoholics and decreases after 3 months hospital inpatient alcohol treatment to similar levels as in healthy subjects. Further studies are required to evaluate new biomarkers in patients with chronic alcohol abuse, their changes during therapy and thus their possible usage in risk evaluation.

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FREE ORAL COMMUNICATIONS 7: SUBGROUPS OF ALCOHOL DEPENDENCE AND THEIR SPECIAL TREATMENT
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O7.1 ALCOHOL DEPENDENCE: LINKING GENES WITH INTERMEDIATE NEUROBIOLOGICAL PHENOTYPES K. Hutchison¹, E. Claus², N. Harlard² and A. Bryan¹ ¹University of Colorado, Boulder, CO, USA and ²Mind Research Network, Albuquerque, NM, USA

Given that the etiology of alcohol dependence is related to changes in the neuronal systems involved in the anticipation of reward and executive control, genetic and epigenetic variaties that are associated with individual differences in these mechanisms may be important in terms of predicting the effects of treatments that also target these mechanisms. We recently developed an approach that emphasizes brain-based phenotypes that can be used to link changes at the molecular level (e.g. genetic variation), to changes in neuronal function, and ultimately to changes in clinical outcomes. Importantly, these phenotypes reflect the neurobiological mechanisms that are often the target of medication development. In a recent study, an exploratory genome-wide analysis identified 302 SNPs that were associated with large clusters of brain activation as well as focal activation of the dorsal striatum after exposure to alcohol cues. An aggregate genetic risk (AGR) score reflecting the combined influence of these SNPs demonstrated a similar association with BOLD response after exposure to alcohol cues and loss of control over drinking in an independent sample (P < 0.01). In a third independent genome-wide data set from a large community sample, the correlation between the AGR score and alcohol abuse was highly significant (P < 0.001). Thus, recent analyses have uncovered a number of novel genetic variations that are related to functional brain changes and associated with loss of control over drinking in independent replication samples.

O7.2 SIGNIFICANCE OF ALCOHOL USE DISORDERS IN BINGE EATING DISORDER: A CONTROLLED STUDY OF CO-MORBIDITY C. M. Grilo Yale University School of Medicine, New Haven, CT, USA

Background. Although alcohol use disorders (AUD) and mood disorders (MD) frequently co-occur and are frequently co-morbid in eating disorders and many other psychiatric groups, the significance of such co-morbidity is ambiguous. Since binge eating disorder (BED) is associated with elevated rates of both alcohol and mood disorders, this study compared associations with personality disorders and eating-disorder psychopathology in four subgroups of BED: with AUD, MD, with both MD–AUD and neither MD–AUD.

Methods. A consecutive series of 347 BED patients (259 women, 88 men) were reliability administered semi-structured diagnostic interviews by doctoral research-clinicians to assess DSM-IV psychiatric and substance use disorders (Structured Diagnostic Interview for DSM-IV Psychiatric Disorders), personality disorders (Diagnostic Interview for DSM-IV Personality Disorders), and eating-disorder psychopathology (Eating Disorder Examination Interview).

Results. Ten percent had AUD, 37% had MD, 17% had both MD–AUD and 36% had neither MD–AUD nor other substance use disorders. Cluster B personality disorders (e.g. avoidant and obsessive–compulsive) were significantly more frequent (P < 0.02) in MD–AUD (18%) than other groups and Cluster C personality disorders (e.g. paranoid and dependent–compulsive) were significantly more frequent (P < 0.001) in MD–AUD (48%) and MD (42%) than in AUD (21%) and neither MD–AUD (24%) groups. Binge-eating frequency (P < 0.05) and eating-disorder psychopathology (P < 0.01) were significantly greater in the MD–AUD and MD groups than in the AUD and neither MD–AUD groups, which did not differ from each other.

Conclusions. The additional psychiatric comparison group (co-morbid MD–AUD) and the control group (no mood, alcohol or substance use disorders) allowed for finer distinctions regarding the significance of MD and AUD co-morbidity. In BED, MD-AUD and MDD, but not AUD, are associated with greater personality disorder co-morbidity and severity of eating-disorder psychopathology. Implications for clinical practice and future research will be discussed.

Source of Research Funding: National Institute of Health Grants (R01 DK49587 and K24 DK070052).

O7.3 IMPROVEMENTS IN BALANCE IN TYPE I BUT NOT IN TYPE IV ALCOHOL-DEPENDENT PATIENTS AFTER DETOXIFICATION V. P. Jenkov State Hospital for Treatment of Drug and Alcohol Dependence, Sofia, Bulgaria

Aims. The aim was to study the dynamic balance in subtypes of alcohol patients before and after detoxification.

Methods. Thirty-eight alcohol patients were investigated by the equilibration method of cranio-corpo-graphy during withdrawal, assessed by the CIWA-Ar scale. Twenty-seven patients were investigated after detox. The two groups executed the stepping test of Unterberger-Fukuda. The subjects were clustered by Lesch Alcoholism Typology. Type III patients were excluded from the study.

Results. Subjects of types I, II and IV did not differ in any parameter of balance during withdrawal, but in degree of withdrawal, type I showed higher withdrawal severity compared with type II. Patients of type I showed improvement in balance after detox compared with type IV patients. This improvement is found in the lateral body sway.

Conclusion. Type I alcohol dependents show transitional impairments in balance that alleviate after the relatively more intensive withdrawal is treated while type IV patients show more stable impairments that do not reduce after detoxification.

O7.4 TREATMENT OF ALCOHOL WITHDRAWAL SYNDROME WITH THE USE OF BODY ACUPUNCTURE ACCORDING TO THE LESCH ALCOHOLISM TYPOLOGY S. Toteva and V. Jenkov State Psychiatric Hospital for Treatment of Drug and Alcohol Dependence, Sofia, Bulgaria

Aims. To evaluate the treatment efficacy of body acupuncture compared with conventional detoxification for different Lesch subtypes of patients with alcohol dependence and withdrawal syndrome.

Methods. Sixty-four study subjects were randomly assigned to an acupuncture group (n = 30) and a control group treated by a standard medical detoxification (n = 34). Subjects were assessed before treatment with CIWA-Ar and Lesch alcoholism typology. Patients’ condition was assessed with CIWA-Ar repeatedly during treatment until the end of detoxification.

Results. Significantly better results compared with the control groups were observed in types II and III patients.
Conclusion. Acupuncture is effective in the treatment of withdrawal symptoms in types II and III alcohol-dependent patients according to Lesch typology with the advantage of not having the side effects of medications.

O7.5 DOES ACAMPROSATE IMPROVE CONTROL OF DRINKING AS WELL AS AIDING ABSTINENCE? AN INDIVIDUAL PATIENT DATA META-ANALYSIS OF 16 STUDIES

P. Lehrt1,2 and W. VandenBrink2
1Faculty of Economics, University of Louvain, Mons, Belgium and 2Faculty of Medicine, The University of Melbourne, Melbourne, Australia

Acamprosate is one of the pharmacological treatments currently used to enhance abstinence of alcoholic patients. Some previous studies have assessed to which extent acamprosate was also reducing consumption without full abstinence (controlled drinking). Our objective was to assess the efficacy of acamprosate in increasing the proportion of controlled drinkers, based on an Individual Patient Data analysis from previous studies. Data sources. Individual Patient Data Meta-Analysis on previous randomized controlled trials (RCTs) where consumption data were available with enough accuracy. The selection criteria of the studies were existing RCTs irrespective of years, publication status, language, population, intervention, found of at least reasonable quality and allowing abstinence estimate. Our main endpoint was the proportion of continuously controlled drinkers, defined as < 5 drinks/day for men and 3 for women.

Methods. Rates were compared by a two-level multilevel mixed non-linear logistic model (patient/trial), by considering random treatment effect, fixed study effect, adjusting for baseline predictors, identified at first step by an exploratory stepwise research.

Results. Fourteen RCTs (n = 4935) were included in the primary analysis. Unadjusted proportion of controlled drinkers were 28.1% and 39.1% for placebo and acamprosate, respectively. Baseline alcoholism severity, motivation to start the treatment, drinking behavior at baseline and living alone were the four significantly determinant covariates. By adjusting on these variables, acamprosate effect was characterized by relative benefit RB = 1.44, 95% CI (1.26, 1.64), risk difference RD = 13.5 (9.1, 17.9), number needed to treat NNT = 7.4 (5.6, 11.1), P < 0.001.

Conclusion. While reducing total abstinence as shown in historical trials, acamprosate has a similar effect in increasing controlled drinking. This study provides evidence that acamprosate improves control of drinking as well as aiding abstinence.

O7.6 INFLUENCE OF CANDIDATE GENE VARIANTS ON EARLY ONSET OF DRINKING AND ALCOHOL DEPENDENCE: PERTAINING TO ALCOHOL DEPENDENCE FAMILY HISTORY

U. W. Preuss1, M. Ridinger2, C. Fehr3, G. Koller4, B. Bondy4, N. Wodarz5, M. Soyka6 and P. Zill7
1Department of Psychiatry, Psychotherapy, Psychosomatics, Halle, Germany, 2Regensburg University Medical Center, Department of Psychiatry, Regensburg, Germany, 3Department of Psychiatry, University of Mainz, Mainz, Germany, 4Department of Psychiatry, Ludwig-Maximilians-University, München, Germany, 5University Medical Center, Department of Psychiatry, Regensburg, Germany, 6Privatklinik Meiringen, Meiringen, Switzerland and 7Department of Psychiatry, Ludwig-Maximilians University, München, Germany

Introduction and aim. Several lines of evidence support the hypothesis that a positive family history (FHP) of alcohol dependence (AD) in first-degree relatives is a significant risk factor for an individual to develop AD during their lifetime. However, little is known about the role of specific candidate genes variants which may transmit the risk. The aim of this analyses of the CIGAR (Collaborative initiative on Genetics of alcoholism in Central Europe) is to investigate the influence of known candidate gene variants (ADH4, GABRA2, NR2A) posing a risk for AD on age of first drinking and age of onset in FHP vs. FHN (family history negative) individuals.

Patients and methods. A total of 1351 inpatient subjects with DSM-IV AD from three addiction treatment centers were included. Characteristics of AD and related phenotypes first ages of drinking (FD) and alcohol dependence onset (AOO) were obtained using standardized structured interviews. All subjects were genotyped for ADH4, GABRA2 and NR2A polymorphisms.

Results. FHP vs. FHN individuals had significant more severe characteristics of AD and more comorbidity. FD before age 15 was associated with higher rates of AOO before 30 in FHP. Variants of NR2A were associated with early FD and AOO in male FHP individuals while an ADH4 variant was associated with FHNP.

Conclusions. This study confirms the significant role of FHP in development of AD. The results support the relationship of ADH4 and NR2A variants with FH and related traits in the development of AD.

07.7 INFLUENCE OF AGE AND SEX ON ALCOHOL TOLERANCE IN ADOLESCENT BINGE DRINKERS

U. S. Zimmermann1, L. Mick1, A. Lachnit1, M. Kabus2 and M. Gahr3
1Department of Psychiatry, University Hospital, Technische Universität Dresden, Dresden, Germany, 2Department of Child and Adolescent Medicine, Municipal Hospital Neustadt, Dresden, Germany and 3Department of Child and Adolescent Medicine, University Hospital, Technische Universität Dresden, Dresden, Germany

Rationale. The number of adolescents receiving emergency in-patient treatment for severe alcohol intoxication markedly increased during the past decade. Alcohol tolerance in adolescence can predict the risk for later alcohol use disorders (AUD) and might help discern bingers with high vs. low risk.

Methods. We performed a chart review of all 588 adolescents (aged 12–18 years, mean 16.2) who were admitted to either of the two pediatric inpatient units covering the City of Dresden with a diagnosis of alcohol intoxication between 2003 and 2008. Blood alcohol concentration (BAC) and the Glasgow Coma Scale (GCS; high scores = good function) were determined at admission. BAC and GCS were multiplied to produce a numerical estimate reflecting tolerance to alcohol (TOL).

Results. The mean BAC was 155 mg% (i.e. 0.155%, range 16–312 mg%). The mean GCS was 12.2 (range 3–15). These parameters were negatively correlated with each other, indicating more impairment at higher BACs (r = −0.262, P < 0.001). Their association, however, was weak, explaining only 1.8% of variance. A subset of 34 patients showed remarkably high tolerance, being almost unimpaired with GCS scores of 14 or 15 despite BAC at or above 200 mg%. TOL in the entire sample was significantly influenced by sex, age and their interaction. In the subgroup of 51 patients whose records indicated that they never drank before, neither age nor sex significantly influenced TOL. Their TOL score was significantly lower compared with the 77 patients whose records indicated prior drinking. In the latter subset, TOL significantly increased with age.

Conclusions. Alcohol tolerance in boys and girls develops differently during adolescence. Aging per se does not appear to increase TOL in adolescents who never drink. The high variability of observed TOL might help to discern adolescent bingers with high vs. low risk for later AUDs in the emergency room, simply by measuring BAC and GCS.

POSTER PRESENTATIONS

POSTER SESSION 1: BASIC RESEARCH AND INTERNAL MEDICINE

BASIC RESEARCH

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P01

ASSOCIATION BETWEEN FOK I VITAMIN D RECEPTOR (VDR) GENE POLYMORPHISM AND IMPULSIVENESS IN ALCOHOL-DEPENDENT PATIENTS

M. Wrzosek1, J. Łukaszkiewicz2, A. Jakubczyk2, M. Wrzosek3, H. Matsumoto4 and M. Wojnar4
1Department of Biochemistry and Clinical Chemistry, Medical University of Warsaw, Warsaw, Poland, 2Department of Psychiatry, Medical University of Warsaw, Warsaw, Poland, 3Department of Internal Medicine and Diabetology, Medical University of Warsaw, Warsaw, Poland and 4Department of Psychiatry, University of Michigan, Ann Arbor, MI, USA

We have investigated a potential relationship between Fok I vitamin D receptor gene (VDR) polymorphism and impulsiveness in alcohol-dependent (AD) patients. Genotypes were analyzed using a real-time PCR method in 150 patients (108 males and 42 females) diagnosed with alcohol dependence (DSM-IV criteria) and in 112 healthy controls. DNA was extracted from the whole blood samples using the standard procedure. Fok I VDR gene polymorphism was associated with impulsivity as assessed with BIS-11 total score (P = 0.005), and with attentional impulsiveness (BIS-11 subscale; P =