

ALKOHOL

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Fachpresseschau, zusammengestellt und kommentiert von PD Dr. med. Ulrich W. Preuss (Ltd. Oberarzt, Klinik für Psychiatrie und Psychotherapie, Martin-Luther-Universität Halle-Wittenberg):

Aktuelle Veröffentlichungen zu verschiedenen Rubriken:

Editorial: Mein Standpunkt zu aktuellen Forschungsberichten

1. Grundlagenforschung, Genetik, Molekularbiologie
2. Pharmakologie, Zellstoffwechsel
3. Verhaltensneurobiologie, Umweltfaktoren und Konsum
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Editorial comment:

Der Einzug von neuen Telekommunikationstechniken (SMS) bei der Feststellung von Konsummengen

Was können neue Techniken bei der Therapie von Alkoholkonsumenten oder gar Alkoholabhängigen nutzen, oder sind diese nur für epidemiologische Betrachtungen hilfreich?

Keine Neuigkeit ist, dass eine dauerhaft erhöhte Konsummenge von Alkohol und anderen Substanzen das Risiko erhöht, nicht nur Alkohol riskant zu konsumieren, sondern in der Folge auch einen schädlichen Konsum oder gar eine Abhängigkeit zu entwickeln. Diese Erkenntnis hat nicht zuletzt dazu geführt, dass tägliche und wöchentliche Konsummengen, für die es Grenzwerte für Männer und Frauen gibt, sogar angedacht sind, in die diagnostischen Kriterien für den Missbrauch/Schädlichen Gebrauch oder die Abhängigkeit nach DSM V oder ICD 11 aufgenommen zu werden.

Allerdings sind zahlreiche Hürden bei der genauen Erfassung von Konsummengen gut bekannt. Eine große Schwierigkeit ist die adäquate Erfassung von Konsummengen und -mustern gerade bei den Personen, die bereits einen schädlichen Gebrauch oder Abhängigkeit aufweisen. Diese ist häufig unzuverlässig und mit vielen Fehlern behaftet. Neben „Erinnerungslücken“ kommt hinzu dass viele Betroffene auch ihre Konsummenge bagatellisieren, so dass zuverlässige Angaben alleine aus klinischen Befragungen nur eingeschränkt oder gar nicht zu erhalten sind. Sogar bei Gesunden sind die Angaben aus ähnlichen Gründen so ungenau, dass die erfassten Mengen bei epidemiologischen Studien möglicherweise ebenfalls nur eingeschränkt verwendbar sind, etwa für die Definition von Risikogrenzwerten.

Verschiedene Strategien wurden entwickelt, um die Erfassung von Konsumart (ob oder ob nicht) und wenn ja, Konsummengen und -mustern zu verbessern. Beispielsweise kann ein Konsum mittels direkter Alkoholmetabolite (z.B. Ethyl-Glucuronid) untersucht werden, die zwar Rückschlüsse auf einen Alkoholkonsum, weniger aber über die regelmäßig zugeführte Menge erlauben. Andere Alkoholmarker, wie etwa die Lebertransaminasen erlauben die Beurteilung, ob ein Konsum über den Zeitraum von mehreren Wochen stattgefunden hat, aber keine Rückschlüsse über die Menge oder einen zeitlich kurz zurückliegenden Gebrauch von Alkohol. Eine weitere Strategie war es, Studienteilnehmern Tagebücher auszuhändigen, damit diese selbst und zeitnah den Konsum erfassen. Dies erfordert allerdings ein Training der Betroffenen und ein engmaschiges Monitoring der Betreuer. Außerdem gibt es hinsichtlich des Erfassungszeitraums bisher nur Erfahrungen über eine Spanne von nicht mehr als zwei Wochen. Für die längerfristige Anwendung liegen bisher keine Ergebnisse vor, zudem ist, wie bei den meisten der oben genannten Verfahren, eine gute Mitarbeit der Befragten erforderlich. Wenn es sich dabei um Alkoholabhängige handelt, ist diese „Compliance“ bei rückfälligen Alkoholabhängigen häufig fraglich und damit auch das Dokumentationsergebnis.

Die Untersuchung von Kuntsche und Robert aus der aktuellen Ausgabe von Alcohol Alcoholism (Alcohol Alcoholism 44: 423-428) beschreibt die Evaluation einer weiteren Methode, nämlich, ganz modern, den Einsatz von SMS (Short Message Service) zur Erfassung den täglichen Konsums. Dabei spielt es eine Rolle, dass nach Angaben der Autoren rund 2/3 der Jugendlichen und jungen Erwachsenen aus 31 Ländern Europas und Nordamerikas SMS verwendeten und damit nahezu täglich kommunizierten. Bei den 55 eingeschlossenen Personen aus Lausanne und Umgebung wurde jeweils am Mittag des Folgetages eine SMS mit der Frage nach dem Konsum des letzten Tages und den damit verbundenen Folgen (z.B.

Alkoholbedingter „Hangover“) versandt. Bei dieser Gruppe handelte es sich um jugendliche Alkoholkonsumenten, die aber keine alkoholassoziierte Störung aufwiesen. Die Rate der regelmäßigen Responder betrug 89.1% über einen Zeitraum von 2 Wochen. Als Korrelate wurde internetbasiert der tägliche Alkoholkonsum zu Beginn der Untersuchung erfragt. Als Ergebnis der Studie ist sicherlich bemerkenswert, dass die Resultate der SMS-Befragung eine gute Konkordanz über den Untersuchungszeitraum aufwiesen und die Interviewangaben zu Beginn der Studie moderat, aber signifikant mit den späteren Angaben korrelierten. Darüber hinaus war der durchschnittliche Konsum bei Männern höher als bei Frauen, was für die Validität der Ergebnisse spricht.

Welche Schlüsse lassen sich aus den Studienergebnissen für die Möglichkeiten der SMS zur Erfragung von Konsummengen ziehen? Sicherlich handelt es sich bei der relativ kleinen Untersuchungsstichprobe um Jugendliche und junge Erwachsene, die keinen schädlichen oder abhängigen Konsum aufweisen. Damit kommt die Verwendung von SMS bei epidemiologischen Studien zu Konsummustern wohl besonders in dieser Altersgruppe der 15-25jährigen SMS-Benutzer in Frage. Dies ist in Ländern, die keine so breite Verwendung von SMS aufweisen, sicherlich nicht möglich, wie etwa Entwicklungsländer. Außerdem äußern sich die Autoren sich nicht über die Häufigkeit von SMS Verwendung bei anderen Altersgruppen, etwa der 30 – 45 jährigen, wo die (klinische und ambulante) Behandlung von schädlichem oder abhängigen Konsum am häufigsten ist und ein Monitoring des Konsums nach der Behandlung besonders wichtig wäre. Darüber hinaus wäre bei Personen mit Alkoholkonsum assoziierten Störungen zunächst eine Validierung der Angaben anhand von (direkten) Alkoholmarkern erforderlich, um den häufig vorhandenen „reporting bias“ auszuschließen. Dafür bietet die vorliegende Studie keine Anhaltspunkte und es war wohl auch nicht deren Zielstellung.

## 1. Grundlagenforschung, Genetik, Molekularbiologie

Genetische Varianten des  $\mu$ -Opioidrezeptor sind als mögliche Faktoren für pharmakogenomische Studien nicht nur deshalb von Interesse, da es sich bei diesem Rezeptor um den Wirkort des Rückfallprophylaktikums Naltrexon handelt. Möglicherweise haben diese Varianten auch einen Einfluss auf das Trinkverhalten, das im Zusammenhang mit Stresserleben steht, wie diese Studie belegt.

### **Role of the HPA Axis and the A118G Polymorphism of the $\mu$ -Opioid Receptor in Stress-Induced Drinking Behavior**

Whitney M. Pratt and Dena Davidson

Alcohol Alcohol. 2009 44: 358-365

#### **Abstract**

**Aims:** The present study sought to investigate the relationship between the HPA axis reactivity to stress, the endogenous opioid system and stress-induced drinking behavior.

**Methods:** In the present study, 74 non-treatment-seeking alcohol-dependent subjects were tested under two mood conditions, neutral and stress, in separate testing sessions. Salivary cortisol measurements were obtained following stress induction and during the neutral control condition. Multiple measurements of alcohol intake, latency to access the alcohol cue and craving for alcohol were obtained during cue-availability testing. In addition, 52 of the study subjects were genotyped for the  $\mu$ -opioid receptor. **Results:** A blunted cortisol response to stress was significantly correlated with increased alcohol intake following stress exposure compared to alcohol intake during the neutral session. There was not a clear correlation between the change in cortisol in response to stress and the change in latency to access alcohol or alcohol craving in response to stress. Carriers of the Asp40 variant of the  $\mu$ -opioid receptor exhibited a dampened cortisol response to stress, higher alcohol intake and greater craving in response to stress compared to Asn40 homozygotes, although these differences were not statistically significant. **Conclusions:** The results of the present study indicate that a blunted biological stress response was correlated with increased drinking in response to stress. The Asp40 variant of the  $\mu$ -opioid receptor may be associated with this HPA axis hyporeactivity although the small sample size used in the present study did not permit adequate evaluation of this association.

Craving (oder "Suchtdruck") wird im ICD 10 als definierendes Kriterium der Alkoholabhängigkeit benannt. Diese Untersuchung versucht anhand einer Tryptophan-Depletion das Auftreten von Craving in Abhängigkeit von Allelen des 5-HTTLPR zu untersuchen. Und tatsächlich, Träger des L-Alleles wiesen ein stärkeres Craving auf, als die Vergleichsgruppe und sprechen für die Beteiligung des serotonergen Systems beim Entstehen und der Ausprägung von Craving-

### **Can Serotonin Transporter Genotype Predict Craving in Alcoholism? (p 1329-1335)**

Nassima Ait-Daoud, John D. Roache, Michael A. Dawes, Lei Liu, Xin-Qun Wang, Martin A. Javors, Chamindi Seneviratne, Bankole A. Johnson

### **Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 8, Pages 1329 - 1335**

#### **ABSTRACT**

**Background:** We hypothesize that functional control of the serotonergic system is regulated in part by differential expression of the serotonin (5-HT) transporter (5-HTT). Alcohol-dependent individuals with the LL/LS genotype (L-carriers), compared with those with the SS genotype, have a lower 5-HT neurotransmission, which we hypothesize would be associated with higher craving for alcohol among L-carriers. We hypothesize further that acute peripheral depletion of tryptophan (5-HT's precursor), while further reducing 5-HT function, might decrease auto-inhibition of 5-HT neuronal firing, thereby increasing 5-HT neurotransmission transiently and lowering alcohol craving.

**Methods:** We tested these hypotheses by examining whether in 34 Hispanic alcohol-dependent individuals subjective and physiological cue craving for alcohol differed by genotype, age of onset of problem drinking, and tryptophan availability.

**Results:** On subjective "urge to drink" and "crave for a drink," we found a significant ( $p < 0.05$ ) main effect of genotype and cue, as well as an interaction among genotype, age of onset of problem drinking, and tryptophan depletion. For the physiological measure of pulse, there was a main effect of genotype. L-carriers had higher craving than their SS counterparts, an effect that decreased under tryptophan depletion. While craving in L-carriers increased with an earlier age of onset of problem drinking, the opposite effect was seen in those with the SS genotype.

**Conclusion:** These results not only provide support for the hypothesis that alcoholics who are L-carriers have greater alcohol craving and possibly greater propensity for drinking but also propose that there is an important 5-HTT gene-by-environment interaction that alters cue craving response for alcohol.

Varianten von Genen des GABAergen Systems zählen seit längerem zu wichtigen Kandidaten, die das Risiko für alkoholbedingte Störungsbilder und damit assoziierte Eigenschaften beeinflussen. Diese Assoziationsstudie belegt, dass Varianten von GABRG1 (Gamma-1 Untereinheit des GABA-A Rezeptors) in einer subklinischen Stichprobe mit der physiologischen Reaktion auf Alkohol und Trinkmustern in Verbindung stehen könnten.

### **Associations Among GABRG1, Level of Response to Alcohol, and Drinking Behaviors (p 1382-1390)**

Lara A. Ray, Kent E. Hutchison

### **Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 8, Pages 1382 - 1390**

#### **ABSTRACT**

**Background:** Recent studies of the genetics of alcoholism have focused on a cluster of genes encoding for  $\gamma$ -aminobutyric acid (GABA<sub>A</sub>) receptor subunits, which is thought to play a role in the expression of addiction phenotypes. This study examined allelic associations between 2 single nucleotide polymorphisms (SNPs) of the GABRG1 gene (rs1391166 and rs1497571) and alcohol phenotypes, namely level of response to alcohol, alcohol use patterns, and alcohol-related problems.

**Method:** Participants were non-treatment-seeking seeking hazardous drinkers ( $n = 124$ ) who provided DNA samples, participated in a face-to-face interview for level of response to alcohol, and completed a series of drinking and individual differences measures.

**Results:** Analyses revealed that a SNP of the GABRG1 gene (rs1497571) was associated with level of response to alcohol and drinking patterns in this subclinical sample. Follow-up mediational analyses were also conducted to examine putative mechanisms underlying these associations.

**Discussion:** These findings replicate and extend recent research suggesting that genetic variation at the GABRG1 locus may underlie the expression of alcohol phenotypes, including level of response to alcohol.

## 2. Pharmakologie, Zellstoffwechsel

Alkoholranke können als schwerer und chronischer erkrankt angesehen werden, wenn sie sich bereits zahlreiche Entzugsbehandlungen unterzogen haben. Diese Untersuchung weist auf die die deutlichen Verschlechterungen der neuropsychologischen Leistungsfähigkeit hin, die sich mit wiederholten Entzugsbehandlungen und den zwischenzeitlich wahrscheinlich stattgefundenen Rückfällen einstellen. Besonders Frontalhirnfunktionen, die etwa exekutive Eigenschaften umfassen, sind besonders betroffen, was sich durchaus mit der klinischen Erfahrung deckt.

### **Impairment of Cognitive Abilities and Decision Making after Chronic Use of Alcohol: The Impact of Multiple Detoxifications**

Sabine Loeber, Theodora Duka, Helga Welzel, Helmut Nakovics, Andreas Heinz, Herta Flor, and Karl Mann

Alcohol Alcohol. 2009 44: 372-381;

#### **Abstract**

**Aims:** In the present study, the effect of previous detoxifications on prefrontal function and decision making was examined in alcohol-dependent patients. Further, we examined whether the length of abstinence affects cognitive function. **Methods:** Forty-eight alcohol-dependent patients were recruited from an inpatient detoxification treatment facility and cognitive function was compared to a control group of 36 healthy controls. The patient population was then divided into a group of patients with less than two previous detoxifications (LO-detox group,  $n = 27$ ) and a group of patients with two or more previous detoxifications (HI-detox group,  $n = 21$ ) and cognitive function was compared. In addition, cognitive function of recently (i.e. less than 16 days; median split) and longer abstinent patients was compared. We assessed prefrontal function, memory function and intelligence. **Results:** Alcoholics, when compared to healthy controls, performed worse with regard to the performance index Attention/Executive function. Cognitive impairment in these tasks was pronounced in recently abstinent patients. We found no significant differences between HI-detox and LO-detox patients with regard to the Attention/Executive function. However, in the IOWA gambling Task, the HI-detox group seemed to be less able to learn to choose cards from the more advantageous decks over time. **Conclusions:** Our results provide additional evidence for cognitive impairment of alcohol-dependent patients with regard to tasks sensitive to frontal lobe function and underline the importance of abstinence for these impairments to recover. We found only little evidence for the impairing effects of repeated withdrawal on prefrontal function and we suggest that executive function is affected earlier in dependence.

### 3. Verhaltensneurobiologie, Umweltfaktoren und Konsum

Das Medikament Riluzol, das eigentlich bei der Behandlung der amyotrophen Lateralsklerose in Verwendung findet, wird in diesem Beitrag auf seine Verwendung bei der Behandlung des Alkoholentzugssyndroms bei Mäusen untersucht. Besonders geeignet erscheint diese Substanz, da sie hemmend auf das glutamaterge und stimulierend auf das GABAerge System wirkt. Alkoholkonsum und das Entzugssyndrom waren bei diesen Tieren unter Riluzol weniger stark ausgeprägt, so dass sich damit Möglichkeiten für die Verwendung dieser Substanz bei der Behandlung der Alkoholabhängigkeit eröffnen.

### **Preclinical Evaluation of Riluzole: Assessments of Ethanol Self-Administration and Ethanol Withdrawal Symptoms (p 1460-1468)**

Joyce Besheer, Veronique Lepoutre, Clyde W. Hodge

#### **Alcoholism: Clinical and Experimental Research** **Volume 33 Issue 8, Pages 1460 - 1468**

#### **ABSTRACT**

**Background:** Many of the neurobehavioral effects of ethanol are mediated by inhibition of excitatory *N*-methyl-D-aspartate (NMDA) and enhancement of inhibitory  $\gamma$ -amino-butyric-acid (GABA) receptor systems. There is growing interest in drugs that alter these systems as potential medications for problems associated with alcoholism. The drug riluzole, approved for treatment of amyotrophic lateral sclerosis (ALS), inhibits NMDA and enhances GABA<sub>A</sub> receptor system activity. This study was designed to determine the preclinical efficacy of riluzole to modulate ethanol self-administration and withdrawal.

**Methods:** Male C57BL/6J mice were trained to lever press on a concurrent fixed-ratio 1 schedule of ethanol (10% v/v) versus water reinforcement during daily 16-hour sessions. Riluzole (1 to 40 mg/kg, IP) was evaluated on ethanol self-administration after acute and chronic (2 week) treatment. To determine if riluzole influences ethanol withdrawal-associated seizures, mice were fed an ethanol-containing or control liquid diet for 18 days. The effects of a single injection of riluzole (30 mg/kg) were examined on handling-induced convulsions after ethanol withdrawal.

**Results:** Acute riluzole (30 and 40 mg/kg) reduced ethanol self-administration during the first 4 hours of the session, which corresponds to the known pharmacokinetics of this drug. Ethanol self-administration was also reduced by riluzole after chronic treatment. Riluzole (30 mg/kg) significantly decreased the severity of ethanol-induced convulsions 2 hours after ethanol withdrawal.

**Conclusions:** These results demonstrate that riluzole decreases ethanol self-administration and may reduce ethanol withdrawal severity in mice. Thus, riluzole may have utility in the treatment of problems associated with alcoholism.

Unter Verwendung der Daten der Virginia Zwillingsstudie untersucht dieser Beitrag die Rolle von affektiv assoziierten Trinkmotiven bei der Beziehung von Depressionen und der Alkoholabhängigkeit. Dabei halten die Autoren fest, dass diese affektiv vermittelten Trinkmotive (z.B. Trinken aus Traurigkeit) als möglicher Vulnerabilitätsmarker für Depressionen und Alkoholproblem gelten können.

### **Mood-Related Drinking Motives Mediate the Familial Association Between Major Depression and Alcohol Dependence**

Kelly C. Young-Wolff, Kenneth S. Kendler, Nicole D. Sintov, Carol A. Prescott

#### **Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 8, Pages 1476 - 1486**

### **Mood-Related Drinking Motives Mediate the Familial Association Between Major Depression and Alcohol Dependence**

Kelly C. Young-Wolff, Kenneth S. Kendler, Nicole D. Sintov, and Carol A. Prescott

#### **ABSTRACT**

**Background:** Major depression and alcohol dependence co-occur within individuals and families to a higher than expected degree. This study investigated whether mood-related drinking motives mediate the association between major depression and alcohol dependence, and what the genetic and environmental bases are for this relationship.

**Methods:** The sample included 5,181 individuals from the Virginia Adult Twin Study of Psychiatric and Substance Use Disorders, aged 30 and older. Participants completed a clinical interview which assessed lifetime major depression, alcohol dependence, and mood-related drinking motives.

**Results:** Mood-related drinking motives significantly explained the depression-alcohol dependence relationship at both the phenotypic and familial levels. Results from twin analyses indicated that for both males and females, the familial factors underlying mood-related drinking motives accounted for virtually all of the familial variance that overlaps between depression and alcohol dependence.

**Conclusions:** The results are consistent with an indirect role for mood-related drinking motives in the etiology of depression and alcohol dependence, and suggest that mood-related drinking motives may be a useful index of vulnerability for these conditions.

## 4. Diagnose und Behandlung

Die Identifikation von Risikopatienten, die während ihrer Entzugsbehandlung ein Delirium tremens entwickeln könnten, ist durchaus von klinischer Relevanz. Erniedrigte Laborwerte für Thrombozyten sind nach diesem Beitrag aus Schweden ein mögliches signifikantes Korrelat.

## **Thrombocytopenia in Early Alcohol Withdrawal is Associated with Development of Delirium Tremens or Seizures**

**Ulf Berggren, Claudia Fahlke, Kristina J. Berglund, Kaj Blennow, Henrik Zetterberg and Jan Balldin**

Alcohol Alcohol. 2009 44: 382-386

### **Abstract**

**Aims:** In several studies, possible risk factors/predictors for severe alcohol withdrawal syndrome (AWS), i.e. delirium tremens (DT) and/or seizures, have been investigated. We have recently observed that low blood platelet count could be such a risk factor/predictor. We therefore investigated whether such an association could be found using a large number of alcohol-dependent individuals ( $n = 334$ ). **Methods:** This study is a retrospectively conducted cohort study based on data from female and male patients ( $>20$  years of age), consecutively admitted to an alcohol treatment unit. The individuals had to fulfil the discharge diagnoses alcohol dependence and alcohol withdrawal syndrome according to DSM-IV. **Results:** During the treatment period, 3% of the patients developed DT, 2% seizures and none had co-occurrence of both conditions. Among those with DT, a higher proportion had thrombocytopenia. Those with seizures had lower blood platelet count and a higher proportion of them had thrombocytopenia. The sensitivity and specificity of thrombocytopenia for the development of DT during the treatment period was 70% and 69%, respectively. The positive predictive value (PPV) was 6% and the negative predictive value (NPV) was 99%. For the development of seizures, the figure for sensitivity was 75% and for specificity 69%. The figures for PPV and NPV were similar as those for the development of DT. **Conclusions:** Thrombocytopenia is more frequent in patients who develop severe AWS (DT or seizures). The findings, including the high NPV of thrombocytopenia, must be interpreted with caution due to the small number of patients who developed AWS. Further studies replicating the present finding are therefore needed before the clinical usefulness can be considered.

Dieser Beitrag aus der WHO/ISBRA Collaborative Project Arbeitsgruppe für Alkoholmarker vergleicht, wie akkurat der "Bayesian Alcoholism Test" bei der Detektion von riskantem oder schädlichem Konsum gegenüber biologischen Markern wie der GGT, CDT oder AST abschneidet. Bei diesem Test handelt es sich um eine Kombination verschiedener Indikatoren für den Alkoholkonsum. Wie bereits in vorangegangenen Artikeln zu diesem Test ist dieser auch bei der aktuellen Untersuchung den anderen Markern überlegen.

## Validation of the Bayesian Alcoholism Test Compared to Single Biomarkers in Detecting Harmful Drinking

Sanne Korzec, Alex Korzec, Katherine Conigrave, Janneke Gisolf and Boris Tabakoff

Alcohol and Alcoholism 2009 44(4):398-402;

### Abstract

**Aims:** Conventional tests for alcohol dependence often fail to detect hazardous and harmful alcohol use (HHAU) accurately. We previously validated the Bayesian Alcoholism Test (BAT) for the detection of HHAU among males. This uses 15 biochemical and clinical variables, including questionnaire data to calculate the probability of harmful (>80 g alcohol/day), hazardous (40–80 g/day) and 'moderate' (<40 g/day) drinking. Here we investigate the BAT's diagnostic performance when more limited clinical data are available.

**Methods:** The WHO/ISBRA Collaborative Project recruited subjects from the general community and alcohol dependence treatment services. We analysed data from male drinkers: 318 alcohol dependent, 220 heavy and 712 moderate drinkers. Drinking was assessed using the Alcohol-Use Disorders and Associated Disabilities Interview Schedule. Eight of 15 markers used in the original BAT could be extracted from the WHO/ISBRA dataset. **Results:** Comparing harmful to moderate drinkers, the area under the ROC curve for BAT (0.90) was significantly higher than that for CDT (0.82), GGT (0.77) and AST (0.76). Comparing hazardous to moderate drinkers, the area under the ROC curve for BAT (0.78) was significantly higher than that for AST (0.65) but not significantly higher than that for CDT (0.71) and GGT (0.70). For all 1250 subjects, the amount consumed correlated significantly better with BAT (0.65) than with CDT (0.52), GGT (0.44) or AST (0.40) alone. **Conclusions:** The BAT is more accurate than commonly used single biological markers in detecting harmful alcohol use, even when only half the input requirements are available. Computerized record keeping increases the practicality of use of algorithms in the detection of harmful drinking.

Mit dem Einzug von Internet- und Mobiltelefon-basierten Technologien, in diesem Fall SMS, beim Screening von Konsummustern beschäftigt sich dieser Artikel aus der Schweiz. 55 Probanden wurden über einen Zeitraum von 2 Wochen mittels SMS über ihren täglichen Alkoholkonsum befragt und die Ergebnisse ausgewertet. Darüber hinaus erläutern die Autoren die Möglichkeiten der Anwendung von SMS, insbesondere bei epidemiologischen Untersuchungen. (s. a. Editorial).

### **Short Message Service (SMS) Technology in Alcohol Research—A Feasibility Study**

Emmanuel Kuntsche and Benjamin Robert

Alcohol Alcohol. 2009 44: 423-428

## **Abstract**

**Aim:** The aim of this study was to describe the feasibility, advantages and limitations of the combined use of Internet and SMS technology to assess alcohol use, and to test whether an SMS sent in the evening (i.e. prior to a possible drinking event) changed the respondents' assessment, made on the following day, of the number of drinks consumed. **Participants:** Seventy young adults (mean age 22.7) were recruited through face-to-face contacts, e-mails and Internet advertisements. **Design and setting:** Participants completed a baseline assessment via Internet and were randomly assigned to two conditions (with and without evening SMS). Over four weekends, both Friday and Saturday night, drinking was assessed via SMS questions sent the next day to the participants' cell phones. **Results:** A high retention rate (75% in total) was obtained across all three recruitment conditions. The number of drinks indicated in the SMS survey was strongly correlated with the usual quantity assessed via Internet and did not differ depending on whether an additional SMS question was sent in the evening or not. **Conclusion:** The new method shares some of the advantages of conventional diaries but overcomes most of the limitations: it is easy to use, cost-effective and suitable for large-scale surveys. Application restrictions and further developments are discussed.

## 5. Epidemiologie und Prävention

Konsummuster von Alkohol wurden in dieser epidemiologischen Studie an rund 10.500 Kanadiern erhoben. Im besonderen wollten die Autoren dabei die Beziehung von Konsumhäufigkeit, täglichem Konsum und „Binge Drinking“ (mehr als 5 Alkoholika pro Trinkgelegenheit) untersuchen. Wenig überraschend zeigte sich bei dieser Stichprobe von alkoholkonsumierenden Kanadiern, dass Konsumenten von durchschnittlich weniger als einem Getränk pro Woche weniger regelmäßige Konsumenten sind im Vergleich zu solchen, die mehr Getränke gebrauchen und dass das Risiko für „Binge Drinking“ auch mit der durchschnittlich steigenden Trinkmenge ansteigt.

**The importance of drinking frequency in evaluating individuals' drinking patterns: implications for the development of national drinking guidelines (p 1179-1184)**

Catherine Paradis, Andrée Demers, Elyse Picard, Kathryn Graham

**Addiction**

**Volume 104 Issue 7, Pages 1179 - 1184**

**ABSTRACT**

**Aims** This paper examines the relationship between frequency of drinking, usual daily consumption and frequency of binge drinking, taking into consideration possible age and gender differences.

**Participants and design** Subjects were 10 466 current drinkers (5743 women and 4723 men) aged between 18 and 76 years, who participated in the GENACIS Canada (GENder Alcohol and Culture: an International Study) study.

**Setting** Canada.

**Measurements** The independent variable was the annual drinking frequency. The dependent variables were the usual daily quantity consumed, annual, monthly and weekly frequency of binge drinking (five drinks or more on one occasion).

**Findings** Logistic regressions show (i) that those who drink less than once a week are less likely than weekly drinkers to take more than two drinks when they do drink; (ii) that the usual daily quantity consumed by weekly drinkers is not related to their frequency of drinking; but that (iii) the risk and frequency of binge drinking increase with the frequency of drinking.

**Conclusions** Given that risk and frequency of binge drinking among Canadians increases with their frequency of drinking, any public recommendation to drink moderately should be made with great caution.

Dass Afrika bisher weitgehend ein weißer Fleck in der Alkoholforschung gewesen ist, wird mit dieser Untersuchung zumindest ansatzweise behoben. Mehr als 77.000 Personen aus 20 afrikanischen Ländern wurden durch ein direktes Interview hinsichtlich ihres Alkoholkonsums befragt. Neben Ländern, in denen alle Befragten vollständig abstinent lebten, zeigten die Personen aller anderen Staaten erhebliche Unterschiede in ihren Konsummustern, wobei nie mehr als ein Drittel der Interviewten in allen 20 Staaten überhaupt Alkohol konsumierte.

## **diverse alcohol drinking patterns in 20 African countries (p 1147-1154)**

Thomas Clausen, Ingeborg Rossow, Nirmala Naidoo, Paul Kowal

### **Addiction**

**Volume 104 Issue 7, Pages 1147 - 1154**

#### **ABSTRACT**

**Aims** This paper describes drinking patterns in 20 African countries, exploring the extent of abstinence, heavy occasional drinking and daily light drinking and how these aspects of drinking are inter-related.

**Design and participants** Data were collected as part of the World Health Survey in 2002–04 and comprise national representative data sets from 20 African countries. A cross-sectional survey of 77 165 adults aged 18 years and older were undertaken by face-to-face interviews in respondent households.

**Measures** Drinking behaviour was assessed in terms of life-time abstinence and the following measures over the 7 days immediately preceding interview: high consumption (15 or more drinks); heavy drinking occasions (five or more standard units at at least one session) and daily light drinking (one or two drinks daily).

**Findings** In four countries (Comoros, Mali, Mauritania and Senegal), virtually all respondents were life-time abstainers. The prevalence of current drinkers (previous week) did not exceed one-third in any country. Among current drinkers the prevalence of heavy drinking varied between 7% and 77% and the prevalence of daily light drinkers varied between 0% and 21%. Overall drinking patterns varied significantly between and within the examined African countries.

**Conclusions** African drinking patterns are diverse, and although life-time abstinence dominates in African countries, a single typical pattern of drinking for the African continent, such as the alleged 'all-or-none' pattern, was not observed.

Beobachtungsstudien über 20 Jahre können eine ganze Forscherkarriere überspannen. Dennoch unternahm es diese Forschergruppe, 850 ehemalige alkoholabhängige Teilnehmer einer ambulanten Therapie nach 1, 5, 10 und 20 Jahren nachzubefragen. Mehr als 767 (90%) der Betroffenen konnten kontaktiert und immerhin 393 befragt werden. Während 273 (32%) inzwischen verstorben waren, waren nach 20 Jahren waren immerhin 32.6% der Interviewten abstinent, 3.4% wiesen einen „kontrollierten“ und 10.2% einen kontinuierlichen Konsum auf. Bemerkenswert ist sicherlich, dass zwischen dem 5. und 10 Jahr 23% und ab dem 10 Jahr immerhin noch 10% in die Kategorie des „kontrollierten Konsums“ fielen.

### **Treatment for Alcohol Dependence in Catalonia: Health Outcomes and Stability of Drinking Patterns over 20 Years in 850 Patients**

Antoni Gual, Fabián Bravo, Anna Lligoña, and Joan Colom

Alcohol Alcohol. 2009 44: 409-415

## **Abstract**

**Aims:** The aim of this study was to evaluate long-term outcomes in alcohol-dependent patients following outpatient treatment and gender differences in drinking outcome and mortality. **Methods:** A 20-year longitudinal prospective study was done with interim analyses at 1, 5 and 10 years. Of the original sample of 850 patients, 767 (90%) were located 20 years later and 393 of these were interviewed. 273 (32%) patients died during the intervening period and 101 (12%) no longer wished to participate in the study. Drinking status was assigned based on the 12 months prior to the follow-up interview. **Results:** At the 20-year follow-up, 277 (32.6%) of the 393 patients for whom drinking status could be assigned were abstinent (defined never drinking or drinking on less than occasion per month and never more than four drinks/drinking occasion.), 29 (3.4%) were controlled drinkers and 87 (10.2%) were heavy drinkers. Controlled drinking was the least stable category, with 23% continuing from year 5 to year 10 in that category, and 10% continuing in that category from year 10 to year 20. Mortality was higher (39.1%) in those who had been categorized at year 5 as heavy drinkers compared to those who had been categorized as controlled drinkers or abstinent. Abstinent patients reported fewer alcohol-related problems and better psychosocial functioning than heavy drinkers. Women achieved higher abstinence rates (47.2% versus 29.0%,  $P = 0.005$ ) and had lower mortality (22.4% versus 34.5%,  $P = 0.03$ ) than men. **Conclusions:** Over the long-term, abstinence is the most frequent and stable drinking outcome achieved and is associated with fewer problems and better psychosocial functioning. Controlled drinking is rarely achieved and sustained. Women appear to do better than men in the long term.

Prävention von alkoholbedingten gesundheitlichen und sozialen Folgen kann verschiedene Maßnahmen umfassen, u.a. auch Restriktionen durch Gesetzgebung. Die Wirkung dieser Gesetzgebung in den USA untersuchte diese Studie bei minderjährigen Alkoholkonsumenten anhand der Häufigkeit von alkoholassozierten (fatalen) Unfällen. Dabei zeigte sich ein günstiger Zusammenhang zwischen niedrigeren Unfallzahlen mit den verordneten Verboten (kein Besitz, „possession“ und kein Verkauf „purchase“) und mit einer Nulltoleranz (Zero tolerance, Strafbarkeit für Alkohol am Steuer). Die Autoren weisen darauf hin, dass diese Maßnahmen bisher nicht von allen Bundesstaaten der USA angewandt werden.

### **The Impact of Underage Drinking Laws on Alcohol-Related Fatal Crashes of Young Drivers (p 1208-1219)**

James C. Fell, Deborah A. Fisher, Robert B. Voas, Kenneth Blackman, A. Scott Tippetts

#### **Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 7, Pages 1208 - 1219**

#### **ABSTRACT**

**Background:** This study used a pre- to post-design to evaluate the influence on drinking-and-driving fatal crashes of 6 laws directed at youth aged 20 and younger and 4 laws targeting all drivers.

**Methods:** Data on the laws were drawn from the Alcohol Policy Information System data set (1998 to 2005), the *Digests of State Alcohol Highway Safety Related Legislation* (1983 to 2006), and the Westlaw database. The Fatality Analysis Reporting System data set (1982 to 2004) was used to assess the ratio of drinking to nondrinking drivers involved in fatal crashes [fatal crash incidence ratio (CIR)]. The data were analyzed using structural equation modeling techniques.

**Results:** Significant decreases in the underage fatal CIR were associated with presence of 4 of the laws targeting youth (possession, purchase, use and lose, and zero tolerance) and 3 of the laws targeting all drivers (0.08 blood alcohol concentration illegal per se law, secondary or upgrade to a primary seat belt law, and an administrative license revocation law). Beer consumption was associated with a significant increase in the underage fatal CIR. The direct effects of laws targeting drivers of all ages on adult drinking drivers aged 26 and older were similar but of a smaller magnitude compared to the findings for those aged 20 and younger. It is estimated that the 2 core underage drinking laws (purchase and possession) and the zero tolerance law are currently saving an estimated 732 lives per year controlling for other exposure factors. If all states adopted use and lose laws, an additional 165 lives could be saved annually.

**Conclusions:** These results provide substantial support for the effectiveness of under age 21 drinking laws with 4 of the 6 laws examined having significant associations with reductions in underage drinking-and-driving fatal crashes. These findings point to the

importance of key underage drinking and traffic safety laws in efforts to reduce underage drinking-driver crashes.

Ein in der Forschung und öffentlichen Wahrnehmung bisher eher vernachlässigtes Thema ist der Alkoholkonsum und damit assoziierte Probleme beim älteren Menschen. Diese Untersuchung unternimmt den Versuch, Alkoholkonsumenten über 55 Jahre über 10 und 20 Jahre nachzuverfolgen.

Bemerkenswert ist, dass selbst im Alter Männer mehr trinken als Frauen und mindestens die Hälfte der Männer mehr als 2 alkoholische Getränke pro Tag bei mehr als 7 Gelegenheiten pro Woche konsumiert. Die Autoren schließen, dass es möglicherweise empfehlenswert ist, die Grenzwerte für den riskanten Konsum bei Männern im Alter denen von Frauen anzugleichen.

### **Older adults' alcohol consumption and late-life drinking problems: a 20-year perspective**

Rudolf H. Moos, Kathleen K. Schutte, Penny L. Brennan, Bernice S. Moos

#### **Addiction**

**Volume 104 Issue 8, Pages 1293 - 1302**

#### **ABSTRACT**

**Aims** The aim of this study was to identify changes in patterns of alcohol consumption over a 20-year interval among older women and men, and to examine the associations between guideline-defined excessive drinking and late-life drinking problems.

**Design, participants and measures** A community sample of 719 adults between 55 and 65 years of age who consumed alcohol at or prior to baseline participated in a survey of alcohol consumption and drinking problems and was followed 10 years and 20 years later.

**Findings** The likelihood of excessive drinking declined over the 20-year interval as adults matured into their 70s and 80s. However, at ages 75–85, 27.1% of women and 48.6% of men consumed more than two drinks per day or seven drinks per week. At comparable guideline levels of alcohol consumption, older men were more likely to have drinking problems than were older women. Consumption of more than two drinks per day or seven drinks per week was identified as a potential conservative guideline for identifying excessive drinking associated with an elevated likelihood of drinking problems.

**Conclusions** A substantial percentage of older adults who consume alcohol engage in guideline-defined excessive drinking and incur drinking problems. The finding that older men may be more likely than older women to experience problems when they drink beyond guideline levels suggests that alcohol guidelines for men should not be set higher than those for women.

Diese katamnestische Untersuchung stammt von der Forschungsgruppe des National Comorbidity Surveys (NCS) und wird als NCS-2 bezeichnet. 10 Jahre nach der ursprünglichen Erhebung 1990 wurde eine Untergruppe (87.1%) der ursprünglichen Stichprobe erneut befragt. Schwerpunkt dieses Artikels ist die Rolle von soziodemographischen Variablen und des Substanzgebrauches als Risikofaktoren für den Beginn der Alkoholabhängigkeit. Dabei ergaben sich ein differentieller Einfluss dieser Größen auf Konsummuster und den Beginn der Verlauf der Abhängigkeitsentwicklung.

**Socio-demographic risk factors for alcohol and drug dependence: the 10-year follow-up of the national comorbidity survey (p 1346-1355)** Joel Swendsen, Kevin P. Conway, Louisa Degenhardt, Lisa Dierker, Meyer Glantz, Robert Jin, Kathleen R. Merikangas, Nancy Sampson, Ronald C. Kessler

### **Addiction**

**Volume 104 Issue 8, Pages 1346 - 1355**

#### **ABSTRACT**

**Aims** Continued progress in etiological research and prevention science requires more precise information concerning the specific stages at which socio-demographic variables are implicated most strongly in transition from initial substance use to dependence. The present study examines prospective associations between socio-demographic variables and the subsequent onset of alcohol and drug dependence using data from the National Comorbidity Survey (NCS) and the NCS Follow-up survey (NCS-2).

**Design** The NCS was a nationally representative survey of the prevalence and correlates of DSM-III-R mental and substance disorders in the United States carried out in 1990–2002. The NCS-2 re-interviewed a probability subsample of NCS respondents a decade after the baseline survey. Baseline NCS socio-demographic characteristics and substance use history were examined as predictors of the first onset of DSM-IV alcohol and drug dependence in the NCS-2.

**Participants** A total of 5001 NCS respondents were re-interviewed in the NCS-2 (87.6% of baseline sample).

**Findings** Aggregate analyses demonstrated significant associations between some baseline socio-demographic variables (young age, low education, non-white ethnicity, occupational status) but not others (sex, number of children, residential area) and the subsequent onset of DSM-IV alcohol or drug dependence. However, conditional models showed that these risk factors were limited to specific stages of baseline use. Moreover, many socio-demographic variables that were not significant in the aggregate analyses were significant predictors of dependence when examined by stage of use.

**Conclusions** The findings underscore the potential for socio-demographic risk factors to have highly specific associations with different stages of the substance use trajectory.

## 6. Somatische Alkoholeffekte

An einer größeren Anzahl von Patienten aus Dänemark wird in dieser Untersuchung erneut belegt, dass eine Alkoholabhängigkeit, die gewöhnlich mit erheblichen Mengen des Alkoholkonsums verbunden ist, das Risiko für verschiedene Tumoren, besonders entlang des Verdauungstraktes, signifikant erhöht. Ausgenommen davon sind - in dieser Stichprobe - Tumoren der Brust und des Colorektums.

### **Cancer Incidence among Patients with Alcohol Use Disorders—Long-Term Follow-Up**

Lau Caspar Thygesen, Pernille Mikkelsen, Tina Veje Andersen, Hanne Tønnesen, Knud Juel, Ulrik Becker, and Morten Grønbæk

Alcohol Alcohol. 2009 44: 387-391

## **Abstract**

**Aims:** The aim of this study was to compare the cancer morbidity in a large cohort of patients with alcohol use disorders in the general Danish population. **Methods:** We included 15,258 men and 3552 women free of cancer when attending the Copenhagen Outpatient Clinic for Alcoholics in the period from 1954 to 1992. The cancer incidence until 1999 of the patients and the general Danish population was obtained through linkage with the Danish Cancer Registry. The incidence rates were standardized (SIR) according to sex, age and calendar time. **Results:** A total of 2145 men developed cancer compared to 1140.8 expected cases (SIR = 1.9; 95% confidence interval (CI) 1.8–2.0), while 601 women developed cancer compared to 239.1 expected cases (SIR = 2.5; 95% CI 2.3–2.7). Highly significant and strongly elevated incidence rates were found for cancer of the tongue, mouth, pharynx, oesophagus, liver, larynx and lung. A higher incidence rate was seen for renal cancer for both men (1.4; 1.1–1.8) and women (2.1; 1.0–3.8). The incidence of breast cancer in women was non-significantly elevated, but significantly elevated incidence rate was found for cervical cancer (1.8; 1.2–2.6). We did not observe increased incidence of colon, rectal or urinary bladder cancer.

**Conclusions:** In conclusion, this study confirms the well-established association between high alcohol intake and cancer of the upper digestive tract and liver. In addition, the results indicate a significantly elevated occurrence of renal cancer, but not of breast cancer and colorectal cancer, in patients with alcohol use disorders.

Ein besseres Verständnis für Alkoholabhängige mit Leberzirrhose mahnt dieser Beitrag an. Er fasst aktuelle Befunde zur alkoholbedingten Leberzirrhose sowie dessen Pathophysiologie zusammen und weist auf Therapiestrategien zur Besserung der Abstinenz hin, wie etwa die Verwendung von Baclofen.

**Understanding and Treating Patients With Alcoholic Cirrhosis: An Update (p 1136-1144)**

Giovanni Addolorato, Marcia Russell, Emanuele Albano, Paul S. Haber, Jack R. Wands, Lorenzo Leggio

**Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 7, Pages 1136 - 1144**

**ABSTRACT**

Alcoholic cirrhosis represents the terminal stage of alcoholic liver disease (ALD) and one of the main causes of death among alcohol abusers. The aim of this review was to provide an update on alcoholic cirrhosis, with an emphasis on recent findings. Increased alcohol consumption in developing countries is expected to increase cirrhosis mortality. There is a need, therefore, to develop new approaches to the prevention of ALD, including more attention to co-factors that may increase risk of ALD (i.e., obesity and diabetes, chronic HCV infection, and smoking). Furthermore, a better understanding of the pathological mechanisms on the basis of alcohol cirrhosis represents a cornerstone in order to develop new pharmacological treatments. Inflammatory and immune responses along with oxidative stress and alterations in adipokine secretion might contribute in different ways to the evolution of alcohol-induced fibrosis/cirrhosis. As of this date, patients with severe alcoholic hepatitis with a Maddrey Discriminant Factor (MDF)  $\geq 32$  should be offered pentoxifylline and/or corticosteroids unless contraindications exist. For ambulatory patients, S-adenosylmethionine (SAMe) may be considered in a motivated patient with nutritional support. Current studies do not support use of anti-tumor necrosis factor (TNF)- $\alpha$  antibody. Finally, achieving total alcohol abstinence should represent the main aim in the management of patients affected by any stage of cirrhosis. In the last decades, several drugs able to increase abstinence and prevent alcohol relapse have been evaluated and some of them have obtained approval for alcohol dependence. Patients with alcoholic cirrhosis; however, are usually excluded from such treatments. A recent study demonstrated the efficacy and safety of baclofen in inducing and maintaining alcohol abstinence in cirrhotic alcohol-dependent patients with cirrhosis. All together the information available suggests the need of a multimodal approach in the clinical management of these patients.

Bereits länger ist durch Beiträge dieser und anderer Arbeitsgruppen bekannt, dass jugendliches Rauschtrinken nicht ohne Folgen für die Gehirne dieser Altersgruppe bleibt. In dieser Studie an 18 Rauschtrinkern („binge drinkers“) konnten entsprechend Veränderungen der weißen Substanz in 18 Gehirnregionen gefunden werden, die u.a. das Corpus Callosum und das limbische System einschlossen. Die Autoren weisen erneut auf das Risiko von Veränderungen der weißen Substanz, besonders bei „binge drinkern“ hin.

### **Altered White Matter Integrity in Adolescent Binge Drinkers (p 1278-1285)**

Tim McQueeney, Brian C. Schweinsburg, Alecia D. Schweinsburg, Joanna Jacobus, Sunita Bava, Lawrence R. Frank, Susan F. Tapert

### **Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 7, Pages 1278 - 1285**

#### **ABSTRACT**

**Background:** White matter integrity has been found to be compromised in adult alcoholics, but it is unclear when in the course of alcohol exposure white matter abnormalities become apparent. This study assessed microstructural white matter integrity among adolescent binge drinkers with no history of an alcohol use disorder.

**Methods:** We used diffusion tensor imaging to examine fractional anisotropy (FA), a measure of directional coherence of white matter tracts, among teens with ( $n = 14$ ) and without ( $n = 14$ ) histories of binge drinking but no history of alcohol use disorder, matched on age, gender, and education.

**Results:** Binge drinkers had lower FA than controls in 18 white matter areas (clusters  $\geq 27$  contiguous voxels, each with  $p < 0.01$ ) throughout the brain, including the corpus callosum, superior longitudinal fasciculus, corona radiata, internal and external capsules, and commissural, limbic, brainstem, and cortical projection fibers, while exhibiting no areas of higher FA. Among binge drinkers, lower FA in 6 of these regions was linked to significantly greater lifetime hangover symptoms and/or higher estimated peak blood alcohol concentrations.

**Conclusions:** Binge drinking adolescents demonstrated widespread reductions of FA in major white matter pathways. Although preliminary, these results could indicate that infrequent exposure to large doses of alcohol during youth may compromise white matter fiber coherence.

## 7. Editorials, Übersichten

Die Wirksamkeit des Einsatzes von Akupunktur bei der Behandlung von Alkoholabhängigen wird in dieser Arbeit aus Korea übersichtsartig beurteilt. Demnach werden Akupunkturmethoden seit mehr als 30 Jahren in der Behandlung von Abhängigkeitserkrankungen, insbesondere bei Craving, eingesetzt, die Mehrzahl der Studien hat allerdings eine unzureichende methodische Qualität. Von insgesamt 11 gefundenen Studien waren nur 4 Vergleichsstudien und lediglich 2 erfüllten ausreichende Qualitätskriterien. Immerhin berichteten 3 Studien über eine Besserung von Craving. Zweifellos ist die Anregung der Autoren, mehr und bessere Studien auf zur Akupunkturbehandlung durchzuführen, wichtig.

**Acupuncture for Alcohol Dependence: A Systematic Review (p 1305-1313)**

Seung-Hun Cho, Wei-Wan Whang

**Alcoholism: Clinical and Experimental Research**

**Volume 33 Issue 8, Pages 1305 - 1313**

**ABSTRACT**

**Background:** Acupuncture has been used in the treatment of substance-related disorders for the past 30 years. However, a systematic review to assess the effect of various types of acupuncture for alcohol dependence has not yet been performed. The present systematic review assessed the results of randomized controlled trials (RCTs).

**Methods:** Nineteen electronic databases, including English, Korean, Japanese, and Chinese databases, were systematically searched for RCTs of acupuncture for alcohol dependence up to June 2008 with no language restrictions. The methodological qualities of eligible studies were assessed using the criteria described in the *Cochrane Handbook*.

**Results:** Eleven studies, which comprised a total of 1,110 individual cases, were systematically reviewed. Only 2 of 11 trials reported satisfactorily all quality criteria. Four trials comparing acupuncture treatment and sham treatments reported data for alcohol craving. Three studies reported that there were no significant differences. Among 4 trials comparing acupuncture and no acupuncture with conventional therapies, 3 reported significant reductions. No differences between acupuncture and sham treatments were found for completion rates (Risk Ratio = 1.07, 95% confidence interval, CI = 0.91 to 1.25) or acupuncture and no acupuncture (Risk Ratio = 1.15, 95% CI = 0.79 to 1.67). Only 3 RCTs reported acupuncture-related adverse events, which were mostly minimal.

**Conclusions:** The results of the included studies were equivocal, and the poor methodological quality and the limited number of the trials do not allow any conclusion about the efficacy of acupuncture for treatment of alcohol dependence. More research and well-designed, rigorous, and large clinical trials are necessary to address these issues

Diese Übersicht beschäftigt sich mit den aktuellen Erkenntnissen zu neurobiologischen Grundlagen von Craving. Sie verweist dabei auf die mögliche Rolle des neuroendokrinen Stoffwechsels und von GABA<sub>B</sub>-Rezeptoren und deren gegenseitige Beziehung bei der Entstehung und der Intensität des Suchdrucks. Ebenfalls wird auf daraus resultierende Behandlungsmöglichkeiten eingegangen.

## **Understanding and Treating Alcohol Craving and Dependence: Recent Pharmacological and Neuroendocrinological Findings**

Lorenzo Leggio

Alcohol Alcohol. 2009 44: 341-352;

### **Abstract**

There is a substantial need for discovering innovative ways to provide more information on the neurobiology of alcohol dependence as well as to discover more effective pharmacotherapies for alcohol dependence. Current research includes exploring new pathways able to modulate alcohol craving. In particular, research shows that several neuroendocrinological pathways may be involved in the neurobiology of alcohol craving and dependence. The first part of this review examines recent clinical findings on the role of feeding-related peptides in alcohol craving and dependence. Second, this review focuses on the need to discover new medications that may prove to be safe and effective in the treatment of alcohol dependence. For example, the GABA<sub>B</sub> receptor has been suggested as a new possible neuropharmacological target in the treatment of alcohol dependence. Accordingly, the second part of this review examines recent clinical findings on the role of the selective GABA<sub>B</sub> receptor agonist baclofen in the treatment of alcohol-dependent subjects. These two distinct topics will be both analyzed and discussed. The final part of this review discusses possible connections between these two topics, as an example of possible interactions between psychoneuroendocrinology and neuropharmacology. These possible interactions could lead to future intriguing research aimed at understanding and treating alcohol craving and dependence.

Genetische und Umwelteinflüsse auf internalisierende Symptome und begleitenden Alkoholkonsum werden in dieser Übersicht dargestellt. Dazu unternahmen die Autoren eine breit angelegte Suche in medizinischen Datenbanken wie Medline oder Embase. Im Ergebnis berichten die Autoren über genetische Varianten des DRD2, 5-HTT und MAOA, die zusammen mit externalisierendem Verhalten, positiver Familiengeschichte der Alkoholabhängigkeit und Stresserleben am häufigsten mit den beiden oben genannten Eigenschaften assoziiert sind.

### **Genetic and non-genetic influences on the development of co-occurring alcohol problem use and internalizing symptomatology in adolescence: a review**

Luca Saraceno, Marcus Munafó, Jon Heron, Nick Craddock, Marianne B. M. van den Bree

#### **Addiction**

**Volume 104 Issue 7, Pages 1100 - 1121**

#### **ABSTRACT**

**Aims** Alcohol problem use during adolescence has been linked to a variety of adverse consequences, including cigarette and illicit drug use, delinquency, adverse effects on pubertal brain development and increased risk of morbidity and mortality. In addition, heavy alcohol-drinking adolescents are at increased risk of comorbid psychopathology, including internalizing symptomatology (especially depression and anxiety). A range of genetic and non-genetic factors have been implicated in both alcohol problem use as well as internalizing symptomatology. However, to what extent shared risk factors contribute to their comorbidity in adolescence is poorly understood.

**Design** We conducted a systematic review on Medline, PsycINFO, Embase and Web of Science to identify epidemiological and molecular genetic studies published between November 1997 and November 2007 that examined risk factors that may be shared in common between alcohol problem use and internalizing symptomatology in adolescence.

**Findings** Externalizing disorders, family alcohol problems and stress, as well as the serotonin transporter (*5-HTT*) S-allele, the monoamine oxidase A (*MAOA*) low-activity alleles and the dopamine D2 receptor (*DRD2*) Taq A1 allele have been associated most frequently with both traits. An increasing number of papers are focusing upon the role of gene–gene (epistasis) and gene–environment interactions in the development of comorbid alcohol problem use and internalizing symptomatology.

**Conclusions** Further research in adolescents is warranted; the increasing availability of large longitudinal genetically informative studies will provide the evidence base from which effective prevention and intervention strategies for comorbid alcohol problems and internalizing symptomatology can be developed.

## 8. Links