In this study, we examined the effect of maintenance of BD during a period of at least two years on prefrontal/executive functioning in youths.

Methods. Electrophysiological and neurocognitive measures of executive processes (response inhibition and working memory) were taken at two different times within a two-year interval in a sample of undergraduate students (when they were aged 18-19 and 20-21 years; 40 controls and 33 binge drinkers). At the second evaluation time, structural magnetic resonance (MRI) images were also collected.

Results. Youths who engaged in a BD pattern for at least two years, relative to aged-matched controls, exhibited abnormal electrophysiological activity during response inhibition as measured by a Go/NoGo task (i.e., larger amplitudes of the NoGo-P3 component of event-related potentials) and during a visual oddball task (i.e., larger amplitudes of P3 to target stimuli), and performed worse on self-ordered working memory tasks (i.e., committed more perseverative errors on the Self-Ordered Pointing Test, SOPT). Volumetric analysis of MRI data revealed structural differences between groups in prefrontal regions.

Conclusions. Overall, our findings indicate that a repeated exposure to alcohol during late adolescence is associated with altered executive functioning known to depend on the integrity of the lateral prefrontal cortex.

S24.1

ACCEPTANCE AND COMMITMENT THERAPY (ACT): A PILOT MINDFULNESS-BASED PSYCHOTHERAPEUTIC CLINICAL TRIAL IN A DUAL DIAGNOSIS POPULATION

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Background. Alcohol use disorder (AUD) patients with co-morbid psychiatric illness have poorer prognosis than either diagnosis alone. There is a dearth in the literature of mindfulness-based psychological interventions developed to systematically treat dual diagnosis.

Methods. Through an open labelled clinical design, participants (N = 27) with DSM IV diagnosed AUD and co-morbid affective disorder and/or anxiety disorder were treated with a four-week integrated inpatient programme of manualized group ACT developed for dual diagnosis. Participants were assessed for depression, anxiety, elation, cravings, drink/drug intake on admission, discharge, and at 3 and 6-months post discharge from the program. Primary outcome measures were Beck’s Depression Inventory (BDI-II), Beck’s Anxiety Inventory (BAI), and Cumulative Abstinence Duration (CAD) in days post-discharge. Chi-square analyses were conducted to establish differences between groups on categorical variables. To investigate changes over time, McNemar’s tests were used for categorical variables and analysis of variances (ANOVAs) was generated for continuous variables.

Results. The retention rate at 3 months post-discharge was 92.5% (N = 25) and at 6 months post-discharge was 88.9% (N = 24). In the overall group there was significant difference in BDI and BAI scores at 3-months and 6-months after adjusting for the baseline scores (p < 0.05). There was also a significant reduction in number of drinking days and greater CAD at 3-months and 6-months (p < 0.05). Global assessment of functioning, craving, GGT and MCV fell over time (p < 0.05).

Conclusions. There is evidence for efficacy of operationalised psychological intervention in treating co-morbid affective and anxiety disorder in patients with AUD leading to reduction in biological and psychological markers of illness.

S24.2

SUPPORTIVE TEXT MESSAGING FOR DEPRESSION AND COMORBID ALCOHOL USE DISORDER: SINGLE-BLIND RANDOMISED TRIAL

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Background. Mobile phone text message technology has the potential to improve outcomes for patients with depression and co-morbid Alcohol Use Disorder (AUD).

Aims. To perform a randomised rater-blinded trial to explore the effects of supportive text messages on mood and abstinence outcomes for patients with depression and co-morbid AUD.

Methods. Participants (n = 54) with a DSM IV diagnosis of unipolar depression and AUD who completed an in-patient dual diagnosis treatment programme were randomised to receive twice daily supportive text messages (n = 26) or a fortnightly thank you text message (n = 28) for three months. Primary outcome measures were Beck’s Depression Inventory (BDI-II) scores and Cumulative Abstinence Duration (CAD) in days at three months. Trial registration: NCT0137868.

Results. There was a statistically significant difference in three month BDI-II scores between the intervention and the control groups; 8.5 (SD = 8.0) vs. 16.7 (SD = 10.3) respectively after adjusting for the baseline scores, F (1, 49) = 9.54, p = 0.003, ηp2 = 0.17. The mean difference in change BDI-II scores was 7.9 (95% CI [13.06 to 2.76, Cohen’s d = 0.85). There was a trend for a greater CAD in the text message group than the control group: 88.3 (SD = 6.2) vs. 79.3 (SD = 24.1), t = 1.78, df = 48, p = 0.08. Limitations: Limitations of the study include the small sample size, the potential for loss of rater blinding and the lack of long-term follow-up to determine the longer term effects of the intervention.

Conclusion. Supportive text messages have the potential to improve outcomes for patients with comorbid depression and alcohol dependency syndrome.

S24.3

COMPUTERISED COGNITIVE BEHAVIOURAL THERAPY FOR ALCOHOL USE DISORDER: A PILOT PLACEBO-CONTROLLED TRIAL

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Background. Cognitive behavioural therapy (CBT) has been extensively used in the treatment of alcohol use disorder, but only in individual therapy or group therapy settings, and not delivered via computer. We studied a group of 55 patients with alcohol use disorder, randomised to either 5 hour-long computerised CBT sessions or a placebo cognitive stimulating session, in parallel with a 4-week inpatient rehabilitation treatment, and followed them for 3 months after discharge. The computerised CBT therapy was an interactive, personalised, alcohol-focused therapy based upon a well-researched form of alcohol...
use disorder therapy. Both groups did well, with a significant fall in alcohol outcome measures including number of drinks per drinking day, and number of drinking days, and an increase in abstinence rates in both groups, to an equivalent level. The CBT group attended alcoholics anonymous groups more frequently, and had significant alterations in their alcohol self-efficacy outcomes, and this correlated with their drinking outcomes, unlike the control group. Thus computerised CBT is a potentially useful clinical tool that warrants further investigation in different treatment settings for alcohol use disorder.

S24.4
ABSTINENCE OR REDUCTION – THE DEBATE
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Background. There are longstanding arguments about whether individuals diagnosed with alcohol use disorders can sustain stable, low-risk, drinking.

Methods. Narrative review of 50 years of published longitudinal studies in the general population and among clinic attenders.

Results. Surveys in the general population consistently find individuals who meet criteria for alcohol use disorders, including alcohol dependence, who report that they have reduced their drinking to a level where they do not experience problems. Some, but not all, can show this to be stable, with reports varying in the length of follow-up and thus the length of stability measurable. Results from treatment-seeking populations vary, ranging from 5% to 40% depending on the characteristics of the patients, the treatment setting and therapy offered.

Conclusions. Stable low risk drinking is achieved by some but probably fewer in treatment-seeking populations than the general population. This may be because those entering treatment tend to be those who have already failed to reduce their drinking. Noisily and/or are oriented away from reduction programmes either in their own or their therapists’ thinking. Also, those who would wish a reduced drinking outcome are perhaps deterred from seeking treatment, which they expect to be abstinence-oriented. The limited success, in the past, of treatments aimed at reduction has a bearing on patients’ and therapists’ choice as well as on outcomes.

S25
UNITY IN DIVERSITY
APSAAR, LASBRA & ESBRA JOINT SYMPOSIUM

S25.1
GENETIC ASSOCIATIONS AND CRAVING IN ALCOHOLIC IN-PATIENTS
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Background. Relapse is common in alcoholics even after the withdrawal stage has passed. We explored the relationships between alcohol-use history, craving, and various properties or levels of GABA-A receptor in alcoholics in brain region-specific profiles. While these experiments have indicated significant alterations in various properties or levels of GABA-A receptor in alcoholics in brain region-dependent manner, the studies are often too small to give conclusive results. This case report on alcohol and GABA-A receptor encourages to joint efforts for larger scale experiments on the neurochemical effects of alcohol on most interesting target proteins and brain molecular pathways.

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S25.2
ENVIRONMENTAL ENRICHMENT BLOCKS ETHANOL-INDUCED BEHAVIORAL SENSITIZATION AND DECREASES ETHANOL INTAKE
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Environmental enrichment (EE) is a strategy used to study the environmental influence on the response to addiction-related behaviors. We have demonstrated that EE blocked ethanol-induced sensitization and reduced voluntary ethanol intake in two-bottle choice test. Alterations in the activity of EGR-1 and brain-derived neurotrophic factor (BDNF) in the prefrontal cortex (PFC) have been associated with anxiety-disorders. Mice repeatedly treated with ethanol in EE condition (EE-mice) showed lower expression of EGR-1 and BDNF in the PFC compared to mice housed under standard condition (SC-mice). The reduced expression of EGR-1 and BDNF in response to repeated ethanol found in EE mice seems to be responsible for the reduced behavioral effects of ethanol in EE-mice. CPP is a learning paradigm, which requires associations between reward and environmental cues. Interestingly, EE-mice showed greater ethanol-induced CPP than SC-mice. We have now studied the behavioral consequences of EE in models for the study of stress and anxiety. EE-mice showed lower levels of corticosterone levels after exposure to stress, decreased marble burying and lower latency to open arms entries in the plus-maze when compared to SC-mice. Object recognition test is used to test the spontaneous tendency of rodents to explore a novel object over a familiar, being useful to measure recognition memory process and also motivation. No difference was found in the discrimination ratio between EE and SC-mice, but the exploration score was lower in EE mice than in SC-mice. Our data suggest that EE decreases anxiety-like behavior and the motivation to explore novelty. Financial Support: FAPESP.

S25.3
GABA-A RECEPTORS, ALCOHOL AND RO 15-4513
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Ethanol has many molecular targets in the brain. One of these targets, studied for a long time, is the γ-aminobutyric acid (GABA) type A receptor, which is expressed as pentameric assembly of various subunits generated from 16-19 different genes. It is also a target for a number of clinically important drugs, which affect the brain networks by promoting synaptic phasic inhibition or by increasing extrasynaptic tonic inhibition. While higher concentrations of ethanol have rather consistently enhanced the GABA-A receptor responses, less clear is whether and how lower, non-intoxicating concentrations affect this receptor. Several hypotheses of subunit combinations sensitive to lower ethanol concentrations have been suggested, but none of them have been widely confirmed. Possible alcohol antagonist effects of the benzodiazepine receptor ligand Ro 15-4513 have repeatedly emerged over the last 15 years, but its mechanisms of action still unsolved. Its efficacy seems to be anyway poor. At the same time, there have been efforts to see whether GABA-A receptor undergoes modulation in the alcoholic brain, using various postmortem brain samples for ligand binding, autoradiography and subunit mRNA quantifications. While these experiments have indicated significant alterations in various properties or levels of GABA-A receptor in alcoholics in brain region-dependent manner, the studies are often too small to give conclusive results. This case report on alcohol and GABA-A receptor encourages to joint efforts for larger scale experiments on the neurochemical effects of alcohol on most interesting target proteins and brain molecular pathways.

S25.4
PROFILES OF GABA-A RECEPTOR SUBTYPES IN HUMAN ALCOHOLIC BRAIN
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Conclusions. Our results provide insights for personality-targeted treatments and suggest a possible regulatory role of ghrelin in alcohol craving. Gene polymorphisms that may contribute to the early onset of alcohol misuse were identified.