

ABSTRACTS

The Following abstracts represent other papers read in the meeting. They are only published in abstract form as they only represent work in progress or are to be published in full elsewhere.

BENEMIN: THE BENEFIT OF MINOCYCLINE ON NEGATIVE SYMPTOMS IN PSYCHOSIS

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The negative symptoms associated with psychotic disorders often remain with an individual after their positive symptoms have been alleviated by anti-psychotic drug treatments. Social withdrawal, self-neglect, motivation depletion and lessened cognitive ability are aspects of psychosis which greatly impact an individual's life but are difficult to overcome. Two prior clinical trials have indicated an anti-inflammatory anti-biotic, Minocycline, provides a medicinal reduction in these negative symptoms. The EME-funded, UK multi-centred efficacy and mechanism BeneMin study is a randomised controlled double blind clinical trial of Minocycline with placebo. MRI scans prior to participants receiving trial medication and at the 12-month end point assess changes in grey matter and neural functioning. Assessment of the blood plasma inflammatory markers (cytokines) throughout the trial period will monitor the theorised anti-inflammatory nature of Minocycline. This, along with MRI data will assess links made between grey matter reduction and negative symptoms in addition to Minocycline's neuro-protective properties. The BeneMin study may provide many positive implications for individuals with psychotic disorders and add to the evidence base for psychosis treatment strategies.

INVESTIGATING THE PHENOTYPIC SIGNATURES OF YOUNG ONSET ALZHEIMER'S DISEASE (YOAD) AND THE ROLE OF TREM2 VARIANTS

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Young-onset Alzheimer's disease (YOAD) is defined rather arbitrarily as symptom onset before 65 years of age. Whilst the neuropathological signature of Alzheimer's disease (AD) pathology is broadly the same regardless of age of onset there are differences in the pattern of cognitive deficits, rates of disease progression and rates and patterns of cortical atrophy. The reasons underlying this phenotypic variation and younger age of symptom onset in patients with apparent sporadic disease remain largely elusive.

During the first year of my PhD I have worked on a project describing the clinical phenotype of patients with Alzheimer's disease and variants in the TREM2 gene. TREM2 encodes a triggering receptor expressed on myeloid cells. It is implicated in resolving inflammation in the central nervous system and heterozygous TREM2 variants have recently been reported as a relatively rare but significant risk factor for AD.

We sequenced exon 2 of the TREM2 gene to determine the prevalence of variants in large independent cohorts of AD, FTD, and CJD. Heterozygous R47H variants confer specific risk for Alzheimer's disease, and result in earlier onset of symptoms in a disease that appears otherwise typical for sporadic Alzheimer's disease. TREM2 variants may hence explain in part why some patients are affected at a younger age, and highlights the role of microglia in AD pathogenesis and as future novel therapeutic targets.

CLINICAL AND PHARMACO-EEG CHANGES AFTER A SINGLE INTRAVENOUS INFUSION OF KETAMINE IN PATIENTS WITH TREATMENT-RESISTANT UNIPOLAR DEPRESSION.

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Objective: Treatment resistance in depression is a common clinical problem that constitutes a major challenge for nowadays psychopharmacology. Recent studies have provided evidence for shifting focus to antidepressants with primary pharmacological targets outside the monoamine system to offer more rapid activity with improved therapeutic benefit. In this context, ketamine (non-competitive antagonist of the NMDA receptor) has been repetitively studied in major depression. Intravenous ketamine has been shown to exert a rapid antidepressant effect in adults with treatment resistant depression. In the present study the time-course of effects of ketamine was assessed in depressive patients by sLORETA to elucidate changes associated with treatment response.

Methods: In a double-blind, cross-over, placebo-controlled study we assessed the effect of single infusion of ketamine (0.54 mg/kg within 30min) in 29 inpatients with major depressive disorder. EEG data were analysed on the day of infusion (peak at 10min; end at 30min) and 24hours, 3 and 7days after ketamine administration using standardized low-resolution electromagnetic tomography (sLORETA). Response to treatment was defined as a $\geq 50\%$ reduction of MADRS score.

Results: In the whole group, ketamine infusion induced an acute (10min and 30min) decrease of parietooccipital alpha-1 and alpha-2 sources and increase of gamma sources. Eleven of 29 subjects who responded to medication (38%) were characterized by an excess of mediofrontal delta-and theta sources in comparison to non-responders. Moreover, only the responders showed sustained significant changes (decrease of fast activities in the left temporal lobe) 24 hours, 3 and 7 days after infusion, while no significant changes were observed in non-responders. We have also found a significant correlation between the BPRS score during ketamine infusion and the change of MADRS score at day 7 (i.e. the higher is the intensity of psychotomimetic symptoms during ketamine administration the more pronounced alleviation in depressive symptoms is observed 7 days after the infusion).

Conclusion: Our results suggest that an acute increase of mediofrontal cortical sources of slow rhythms could be potential biomarkers to differentiate responders and non-responders to ketamine in major depression. Moreover, the antidepressive effect of ketamine seems to be undoubtedly connected with patient's psychotomimetic experience.

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THE OPPOSITE EFFECT OF MOOD INDUCTION ON AMYGDALA RESPONSE TO EMOTIONAL STIMULI IN BIPOLAR PATIENTS AND HEALTHY CONTROLS: FMRI STUDY

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Objective: Aberrant amygdala reactivity to affective stimuli represents a candidate factor predisposing bipolar patients (BP) to relapse. It is not clear to what extent amygdala reactivity is state-dependent and data on mood congruent or incongruent processing in BP remain lacking.

To evaluate the differences between BP and healthy control subjects (HC) in modulatory influence of mood on amygdala reactivity and functional connectivity.

Methods: Amygdala response was investigated by functional magnetic resonance imaging (fMRI) during the viewing of emotional sad vs. neutral faces within the period of neutral and sad transient mood induction by autobiographic scripts. We assessed the functional connectivity of amygdala to characterize the influence of induced mood on the network responsible for the amygdala response. We investigated 20 remitted BP (13 females, 7 males, age 39.1, s.d.=13.2) on stable medication and 20 HC matched for age, sex (13 female, 7 male, age 41.9, s.d.=12.9) and education.

Results: The sad and neutral mood induction exerted opposite effects on the amygdala response to emotional faces in BP compared to HC ($F=5.85$, $df=1,38$, $p=0.02$). The sad mood induction amplified the amygdala response to sad facial stimuli in the HC but attenuated the amygdala response in BP. Both groups differed in functional connectivity between the amygdala and the inferior prefrontal gyrus ($p \leq 0.05$, FWE) corresponding to Brodmann area (BA) 47. The sad mood challenge increased connectivity during the period of processing sad faces in BP but decreased connectivity in HC ($p \leq 0.05$).

Conclusions: The mood challenge paradigm can unmask the trait-marker in remitted BD. Our finding of opposite amygdala reactivity to the mood challenge is in accordance with prior studies of bipolar depression and could be due to amygdala-BA47 hyperconnectivity during induced sadness. These results support the role of ventrolateral prefrontal cortex (specifically inferior prefrontal gyrus) as the primary region of dysfunctional contextual affective processing in BP.

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ANALYSIS OF FMRI BOLD SIGNAL COMPLEXITY BY APPROXIMATE ENTROPY

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Approximate entropy (ApEn) is an information-theoretic approach which has been used in analysis of various biological data, such as heart-rate variability, EEG, MRI registration and others. In ER fMRI information entropy was used to overcome the variability of hemodynamic response across various brain regions, individual subjects and experimental paradigms. Lower entropy of task-related BOLD response was also shown to correlate with cognitive decline in aging. In this work we investigated the possibility of using ApEn to analyze resting-state data of 20 patients suffering from bipolar disorder and 20 healthy controls. Our results indicate that ApEn is an effective method for analysis of resting fMRI.

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VIOLENCE AND AGGRESSIVE BEHAVIOUR IN A CHILD WITH ASPERGER'S SYNDROME - A CASE STUDY

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This case study examines the prevalence of violence and aggressive behaviour in children with ASD, with close attention to a case of a 10 year old girl with Asperger's syndrome. The behaviour of 'patient x' is explored in relation to the theories on empathy discussed in a variety of literature, as well as in relation to the aggression itself and what risk factors may contribute to its causation. Reviewing the literature and drawing from the case of patient x, there are several aspects of the violence to evaluate, including intent, risk, pre-disposing and precipitating factors.

ANXIETY AND HOSPITALIZATION IN ADOLESCENCE: RELATIONS TO ATTACHMENT STYLE AND PARENTAL SUPPORT

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This exploratory study examined attachment style and state/trait anxiety in adolescents - 30 recently hospitalized psychiatric patients, and 49 school controls. All were aged 13-18, with the majority (67%) female. The attachment style interview (ASI, Bifulco et al. 2002) was administered, together with the Recent Life Events questionnaire (Brugha & Cragg 1990) and the STAI anxiety questionnaire (Spielberger et al. 1983). Results showed the hospitalised group to have significantly more negative interactions with parents and poorer support than the comparison group. They had significantly more insecure attachment style (96% s 37%). Among the hospitalized adolescents, both the Anxious and the Avoidant attachment style group had higher anxiety scores on the STAI-trait scores than on the STAI-state scores assessed during the first days of hospitalisation. This suggests adolescents, even those with Avoidant attachment feel less anxious after admission. Implications for assessing attachment style in adolescent patients to aid with care planning is discussed.

“METACOPS”: A RANDOMISED CONTROLLED STUDY OF A METACOGNITIVE TRAINING FOR PATIENTS WITH SCHIZOPHRENIA

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Background: Psychosis and first of all schizophrenia used to be considered as essentially a biological condition not suitable for psychological interventions. Since the past two decades there has been a marked increase in psychiatric rehabilitation. Cognitive-behavioral techniques have been increasingly applied to treatment of psychosis and our understanding of the cognitive biases in schizophrenia has expanded.

Cognitive distortions in schizophrenia, like biases in attributional style, jumping to conclusion or deficits in theory of mind, are thought to trigger, aggravate or maintain positive symptomatology (hallucinations, delusions). Cognitive biases might lead to social skills disorders, and to isolation. Upon these considerations some authors developed metacognitive training program (MCT) in order to convey these cognitive biases to patients and help them to correct their cognitive dysfunctions through experience and training, in order to transfer this knowledge for application to daily life.

Purpose: The aim of the metacops study was to evaluate the short and long term impact of a metacognitive training (MCT) for patients suffering from schizophrenia, using the program designed by Moritz and al. (2007). MCT group therapy was controlled by a verbal group therapy.

Our first goal was to analyse the short term impact of MCT on insight and attribution of delusions, using the SUMD (Scale to assess Unawareness of Mental Disorder). Indicative scores were compared within the two groups after two months (duration of MCT therapy, one hour twice a week).

Second goals were to assess the short and long term impact of MCT on other insight items using the SUMD, the IS (Insight Scale) and the BCIS (The Beck Cognitive Insight Scale). The effect on delusion is detailed using the PSYRATS (Psychotic Symptom Rating Scales), on mood using the CDSS (The Calgary Depression Scale for Schizophrenia) on schizophrenic symptomatology using the PANSS (Positive and Negative Syndrome Scale), and on social skills using QLS (Quality of Life Scale). Indicative scores were compared within the two groups after two months of group therapy and again six months after the end of therapy.

Subjects suffering from schizophrenia (according to DSM-IV TR diagnoses) were included after exhaustive information and enlightened consent, and then randomised into two groups: MCT or verbal therapy which were similar in term of duration and frequency.

This multicentric study was conducted from 2009 to 2013 in France. Recruitment took place in the academic hospitals of Besançon, Dijon and Strasbourg, and in psychiatric hospitals of Bavilliers, Rouffach, Dole, Lons-le-Saunier and Novillars.

Results and limites of this study are discussed, and some recommandations are made for future research.

SACCADIC INHIBITION IN DEPRESSED ELDERLY PATIENTS

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Background: Depression in elderly is often unknown, trivial, and frequently considered as a consequence of aging. Cognitive inhibition, a major component of executive functions, has been found to be impaired in depressed elderly through neuropsychological assessment. Here we propose to assess cognitive inhibition through an eye tracking study, no data being available on saccadic performances in the specific population of depressed elderly.

Method: Twenty inpatients (mean age =70.4) meeting DSM-IV criteria for major depressive disorder were compared to forty seven healthy controls. They performed a neuropsychological and psychiatric assessments and two eye movement tasks: a prosaccades task to obtain basic parameters of eye movements and an antisaccade task to evaluate the inhibition capacities.

Results: In comparison with healthy subjects, depressed patients showed impaired performances in both oculomotor tasks. Concerning the prosaccade trial, depressed patients had higher reaction times and error rates than healthy controls. In both populations, hypometric saccades are the main kind of error. In the antisaccade task, reaction times and error rates were also higher in depressed patients than healthy subjects. However, the two populations showed similar correction rates.

Conclusion: The results of this study offer new insight on the inhibition impairment of aged major depressive patients by two simple eye movement tasks. The findings indicate psychomotor retardation and inhibition impairment, consistent with the findings obtained in young depressed subjects.

Key words: inhibition - major depressive disorder - eye movements

IS AMPLITUDE OF DIURNAL MOOD VARIATION ASSOCIATED WITH ANTIDEPRESSANT RESPONSE? A PRELIMINARY STUDY

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Background: Diurnal mood variation (DMV) has been suggested as a predictor of antidepressant response. Most studies on the subject rely on one question from a depression rating scale. Our aim was to evaluate if there is an association between amplitude of DMV, assessed 3 times a day by a multi-dimensional visual analog scale (VAS), and response to antidepressant treatments.

Subjects and methods: Depressed inpatients receiving antidepressant monotherapy were evaluated for depression severity (HDRS and BDI-2) at inclusion, and after 15 and 21 days. They were also evaluated for DMV with question 25 of the Structural Interview Guide for the Hamilton Depression Scale – Seasonal Affective Disorder Version (SIGH-SAD), and with a multi-dimensional VAS focusing on depressive symptoms that they completed 3 times a day for 21 days. Seasonality, chronotype and impulsivity were also evaluated.

Results: 12 of the 20 included subjects completed the study. There was no significant difference in response and remission rates (both for HDRS and BDI-2) between patients with a high DMV, and patients with a low or no DMV. On the contrary, patients with a perceived high DMV (at question 25 of the SIGH-SAD), had a significantly higher remission rate than patients who had no or a perceived low DMV (100% versus 40%, Fisher's exact test $p=0.04$). No significant correlation was found between the amplitude of DMV evaluated with the VAS, and the score of perceived DMV at inclusion evaluated with the SIGH-SAD. Seasonality, as well as atypicality score based on the SIGH-SAD, was not associated with a better response. A significant negative correlation was found between total impulsivity score and chronotype ($p=0.001$).

Conclusions: There was no association between repeated measures of depressive symptoms by VAS, and antidepressant response or remission. However, there was an association between perceived diurnal mood variation and antidepressant remission rate. Perceived and objective diurnal mood variations were not correlated. Objective diurnal mood variation requires high motivation and support to be evaluated three times a day.

Key words: diurnal mood variation - antidepressant response - visual analog scale - depressive disorder – seasonality – chronotype – impulsivity

EFFECTS OF REPEATED TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) ON DEPRESSION AND ADDICTION-RELATED BEHAVIORS IN MICE

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This study is part of a wider translational project carried out in Besançon (France) on the efficacy of repeated transcranial direct stimulation (tDCS) in the treatment of major depression and in attempts to facilitate alcohol and smoking cessation. tDCS is a non-invasive, painless and safe brain stimulation procedure capable of modulating cortical excitability. Preliminary clinical studies have indicated that tDCS applied over the dorsal prefrontal cortex of dependent smokers and alcohol users reduces their desire for smoking and drinking, respectively. However, the neurobiological mechanisms underlying these effects remain unknown. Our goal was thus to develop a model of tDCS in mice to further evaluate the mechanisms of action of tDCS on addiction-related behaviors. To do so, anodal tDCS was applied transcranially in mice over the frontal cortex (2x20 min/day current for 5 consecutive days, intensity=0.2 mA). The control group underwent the same procedure but no current was applied. First, we assessed the impact of tDCS on stress-, anxiety-, and depression-related behaviors as well as on memory performances to get a general picture of the behaviors affected by this technique. Second, we evaluated the impact of tDCS on nicotine and alcohol consumption, as well as on the rewarding effect of nicotine, alcohol and cocaine. Finally, we tested whether tDCS could reduce withdrawal symptoms in adult mice that have been chronically exposed to nicotine or ethanol during their adolescence. Altogether, our data indicate that our protocol of tDCS has antidepressant properties, improves working memory, and reduces the reinforcing effect of several drugs of abuse, as previously reported in clinical studies. Interestingly, tDCS also decreases several symptoms associated with nicotine withdrawal. In conclusion, our animal model has potential value as a means for exploring the neurobiological changes that underlie the beneficial effects of tDCS on addiction-related behaviors.

ANOREXIA AND PRO-ANOREXIA SITES

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Anorexia is a severe psychiatric illness characterised by a low body mass index (BMI) which is purposely induced, commonly through diet and exercise. The increasing number of new cases is a major public health concern and is thought to be linked to media influences. Pro-anorexia websites are created by individuals with anorexia and aim to promote anorexia as a choice, a lifestyle and a community.

Common components of these sites were analysed and included:

- social chat rooms;
- ‘thinspiration’
- diet advice and
- religious references.

Creator information and warnings of the dangerous nature of the content were less commonly featured. Research has shown pro-anorexia sites to have a negative impact on young people’s self esteem, causing them to want to lose weight and exercise. There are many reasons for their popularity, specifically the sense of community they promote, comforting to those isolated from family and friends by anorexia.

Whilst these websites are clearly harmful, members unite against public reactions making them difficult to ban. Instead anorexia recovery sites should be reviewed to perhaps integrate some of the components that have been used so successfully by the pro-anorexia sites.

STRUCTURAL BRAIN CHANGES AND EARLY LIFE EVENTS IN 14-YEAR-OLD ADOLESCENTS WITH SUBTHRESHOLD DEPRESSION: A COMBINED VBM AND DTI STUDY

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Introduction: Subthreshold depression (sDep) in adolescents strongly predicts Major Depressive Disorder in adulthood and even is its highest risk factor with an escalation to full-criteria depression in a substantial proportion of cases. Despite these findings, very little is known about neuroanatomical substrates of sDep in adolescence. We hypothesized that adolescents with sDep would display cerebral changes in frontal-striatal-limbic regions where changes have been reported in neuroimaging studies of depression. We examined brain structural T1-weighted and diffusion-weighted magnetic resonance images and their association with stressful life events in a large sample of adolescents.

Methods: Participants were extracted from the European IMAGEN study cohort of healthy adolescents recruited at age 14. Subthreshold depression was defined as a distinct period of abnormally depressed or irritable mood, or loss of interest, plus two or more depressive symptoms but without diagnosis of Major Depressive Episode. Adolescents with subthreshold depression were compared with control adolescents for T1-weighted imaging using voxel-based morphometry (119 and 461 adolescents respectively), and for diffusion tensor imaging (89 and 422 adolescents respectively) using tract-based spatial statistics. Whole brain analyses were performed with a statistical threshold set to $p < 0.05$ corrected for multiple comparisons. Step-wise regression analyses were then performed between volumes within the previously identified gray matter regions and Life Events Questionnaire (LEQ) scores.

Results: Compared with controls, adolescents with sDep had smaller gray matter volume in caudate head, ventromedial prefrontal and rostral anterior cingulate cortices and lower fractional anisotropy and higher radial diffusivity in the corpus callosum. Caudate head volume negatively correlated with the LEQ “Accident” score, in sDep adolescents but not in controls.

Conclusions: The findings suggest that adolescents with sDep have gray and white matter changes in the frontal-striatal-limbic network implicated in emotional regulation. Severe early life events might interact with structural caudate changes in the onset of early depressive symptoms.

WHITE-MATTER MICROSTRUCTURE AND GRAY-MATTER VOLUMES IN ADOLESCENTS WITH SUBTHRESHOLD BIPOLAR SYMPTOMS

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Background and objectives: A significant proportion of adolescents having hypomanic symptoms or subthreshold bipolar symptoms (SBP) convert to affective disorders. White matter (WM) and grey matter (GM) alterations have been reported both in adolescent-onset affective disorders and in youths at high familial risk. We sought to determine whether healthy adolescents with SBP would have similar early structural changes.

Methods: The participants were extracted from the European Imagen database of community 14-year-old adolescents investigated using T1-MRI and Diffusion Tensor imaging (DTI). All had completed the DAWBA diagnostic computerized interview that allows for symptom assessment. We included 42 adolescents with SBP and 168 controls. Voxel-wise comparisons were performed for DTI parameters using TBSS and for grey matter volume using voxel-based morphometry (VBM).

Results: Significant decreases in global and regional Fractional Anisotropy were observed in SBP adolescents in various WM tracts that have been reported altered in bipolar disorder, and GM volume was significantly decreased in the anterior cingulate cortex.

Discussion: The results suggest that subthreshold bipolarity in adolescents is associated with structural connectivity alterations likely to affect the development of WM bundles and connected GM structures involved in emotion regulation. Whether those alterations are developmental or predict pathology needs further investigation.

PHARMACOLOGY OF CCKB ANTAGONISTS AS POTENTIAL ANTIANXIETY AGENTS USING ISOLATED GUINEA PIG ILEUM

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Introduction: CCKb antagonists showed efficacy in decreasing of anxiety symptoms, although only a few studies have been conducted on this subject. As current treatment of anxiety disorders is limited, invention of new potent CCKb antagonists could become a significant pharmacological tool.

Objectives: To examine newly synthesized CCKb antagonists for their blocking ability on isolated guinea pig ileum, thus creating a new CNS drug.

Methods: 20 CCKb antagonists based on the phenyl pyrazolone template were tested on isolated guinea pig ileum and evaluated in receptor binding essays. Data is presented as dose response curves and Shield plots with subsequent measurement of IC₅₀ values.

Results: The study showed that certain compounds did not display sufficient level of binding activity with IC₅₀ more than 1_{mM}, whereas some compounds named as MTP, MPM, MPE and MPEedemonstrated high binding affinity with IC₅₀ of 23, 25, 20 and 21_{nM} respectively.

Conclusions: The results from this study suggest CCKb antagonists as potent in blocking ability and several listed compounds could be selected for further investigation in animal anxiety models and tested as a new CNS drug.

Key words: CCKb antagonists - guinea pig ileum - receptor binding - antianxiety agents

NEUROPROTECTIVE EFFECTS OF LITHIUM INDEPENDENT OF PROPHYLACTIC TREATMENT RESPONSE

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Background: Neuroimaging studies have demonstrated association between lithium (Li) treatment and brain structure in human subjects. A critical unresolved question is whether this association reflects direct neurochemical effects of Li or indirect effects secondary to treatment response.

Methods: To address this knowledge gap, we compared manually traced hippocampal volumes in 37 bipolar disorders (BD) patients with at least 2 years of Li treatment (Li group), 19 BD patients with <3 months lifetime Li exposure over 2 years ago (non-Li group) and 50 healthy controls. All BD participants were prospectively followed and had at least 10 years of illness and a minimum of 5 episodes. We established illness course and treatment response to Li using NIMH life charts.

Results: The non-Li group had smaller hippocampal volumes than controls or the Li group (F₂; 102=4.97, p=0.009). Yet, the time spent in a mood episode on the current mood stabilizer was over 3 times longer in the Li than the non-Li group (t₅₁=2.00, p=0.05). Even Li-treated patients with episodes while on Li had hippocampal volumes comparable to healthy controls and significantly larger than non-Li patients (t₄₃=2.62, corrected p=0.02).

Conclusions: Whereas patients with limited lifetime Li exposure had significantly smaller hippocampal volumes than controls, patients with comparable illness burden, but with over two years of Li treatment showed hippocampal volumes comparable to controls. Our findings support the neuroprotective effects of Li. The association between Li treatment and hippocampal volume appeared to be independent of treatment response and occurred even in subjects with episodes of BD while on Li. Consequently, these effects of Li on brain structure may generalize to patients with neuropsychiatric illnesses other than BD.

STRUCTURAL PLASTICITY OF INFERIOR FRONTAL GYRUS IN BIPOLAR DISORDERS AND FUTURE RISK OF DEVELOPING THE ILLNESS

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Background: To translate our knowledge about neuroanatomy of bipolar disorder (BD) into a diagnostic tool, it is necessary to identify the neural signature of predisposition for BD and separate it from effects of long-standing illness and treatment. Thus, we examined the associations among genetic risk, illness burden, lithium treatment, and brain structure in BD.

Methods: This is a two-center, replication-design, structural magnetic resonance imaging study. First, we investigated neuroanatomic markers of familial predisposition by comparing 50 unaffected and 36 affected relatives of BD probands as well as 49 control subjects using modulated voxel-based morphometry. Second, we investigated effects of long-standing illness and treatment on the identified markers in 19 young participants early in the course of BD, 29 subjects with substantial burden of long-lasting BD and either minimal lifetime ($n=12$), or long-term ongoing ($n=17$) lithium treatment. Thirdly, we evaluated the prognostic value of the identified markers for future conversion to psychiatric disorders.

Results: Five groups, including the unaffected and affected relatives of BD probands from each center as well as participants early in the course of BD showed larger right inferior frontal gyrus (rIFG) volumes than control subjects (corrected $p<0.001$). The rIFG volume correlated negatively with illness duration (corrected $p<0.01$) and, relative to the controls, was smaller among BD individuals with long-term illness burden and minimal lifetime lithium exposure (corrected $p<0.001$). Li-treated subjects had normal rIFG volumes despite substantial illness burden. There was a trend for greater age adjusted risk of conversion to psychiatric disorders among the unaffected relatives of bipolar probands with enlarged versus normal rIFG ($\beta=1.51$, SE $\beta=0.89$, hazard ratio =4.5, $p=0.07$).

Conclusions: Brain structural changes in BD may result from interplay between illness burden and compensatory processes, which may be enhanced by lithium treatment. Unaffected relatives of bipolar parents with abnormally large rIFG had 4.5 times greater age adjusted risk of converting to any Axis I psychiatric disorders. Abnormal rIFG might help identify who among the offspring of bipolar parents is at a particularly high risk of developing psychiatric disorders.

CAN AN INTEGRATED APPROACH TO MENTAL HEALTH SERVICE PROVISION BE EFFECTIVE IN GHANA?

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The West African nation of Ghana has a rapidly growing economy and steadily improving health statistics. Until recently, the advances made in life expectancy and access to physical health care in Ghana, have not been matched by improvements in mental health services. The overstretched, large institutional model of psychiatric care inherited from the colonial era is now slowly beginning to be recognised as outdated and underfunded, and alternatives are being investigated. A system in which psychiatric care is integrated into physical health services and provided primarily by accessible community teams is proposed as a cost effective model for lower income countries. Developments in the past few years suggest that momentum for change in the Ghanaian mental health system is increasing, and a community based model is beginning to be initiated. This article examines the current system of mental health provision, and explores the challenges and motivations for adopting a more integrated approach.

Key words: Ghana - mental health systems - community mental health care - Africa; stigma - integrated care - psychiatry

NEUROIMAGING OF ALZHEIMER'S DISEASE AND MILD COGNITIVE IMPAIRMENT

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An investigation of a new, non-invasive analysis technique developed in the Imaging Sciences and Biomedical Engineering Department of The University of Manchester, to see whether it shows sensitivity in revealing and quantifying microscopic cortical grey matter alterations in Early Alzheimer's Disease and Mild Cognitive Impairment.

REDUCED ANTICIPATION AND PROCEDURAL LEARNING DURING AN OCULOMOTOR TASK IN ALCOHOL-DEPENDENT SUBJECTS.

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Background: To organise behaviors, the brain makes predictions from past experience. Addicted subjects, who persist in consuming despite negative consequences may be unable to learn from past experience. Anticipatory oculomotor movements may serve as an index of the activity of the striato-frontocortical loop, a dopaminergic cerebral structure that is crucial for learning.

Methods: In this study, we compared 24 healthy subjects to 24 alcohol-dependent (AD) inpatients hospitalized for a detoxification, for their ability to improve their performance in anticipatory eye movements, over two learning sessions separated by a two weeks interval. In AD subjects, the first and second sessions occurred at onset and end of detoxification respectively, to evaluate the effects of the latter on learning.

Results: In controls, anticipatory eye movements' amplitude and velocity improved during the first session. The skills were still present after two weeks and further improved during the second session. Conversely, no anticipatory eye movements were observed during the first or the second session of AD subjects, suggesting a strong learning deficit. The absence of learning between the two sessions were observed despite improvements in selective attention, and a decrease in scores of depression, anxiety, alcohol craving and fatigue that could all be attributed to detoxification.

Conclusion: AD subjects present with a persistent deficit in anticipation and procedural learning during an oculomotor task, that is not linked to changes in selective attention, affect or motivation. These fundamental deficits in anticipation and learning may play a role in the disadapted decision making often observed in addicted subjects.

THE EFFECT OF ONE DORSOLATERAL PREFRONTAL HF-RTMS SESSION ON COGNITIVE FUNCTIONS IN ALCOHOL DEPENDENT PATIENTS

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Aims: As alcohol dependency is characterized by severe executive function deficits, we examined the influence of high-frequency (HF) - repetitive transcranial magnetic stimulation (rTMS) applied to the right dorsolateral prefrontal cortex (DLPFC) on executive functioning in recently detoxified alcohol dependent patients.

Methods: In this randomized, single blind, sham (placebo)-controlled crossover study we included fifty detoxified alcohol dependent patients. We examined the effect of a single right DLPFC HF-rTMS session on commission errors, mean reaction times (RT) and intra-individual reaction time variability (IIRTV) during a Go-NoGo task (50% Go / 50% NoGo condition) in 29 alcohol dependent patients. Patients completed this cognitive task immediately before and immediately after the stimulation session. In order to avoid carry-over effects between stimulation sessions, a one-week inter-session interval was respected. Because rTMS treatment has been shown to affect subjective craving all patients were also assessed with the Obsessive Compulsive Drinking Scale (OCDS).

Results: After both stimulation conditions we observed a significant decrease of commission errors, without differences between active and sham HF-rTMS stimulation. No significant difference was observed between active and sham stimulation on mean RT. However, only active stimulation resulted in a significant decrease in IIRTV. No effects of stimulation were found for the craving measurements.

Conclusion: Our findings suggest that in recently detoxified alcohol dependent patients, one right-sided HF-rTMS session stabilizes attentional control during executive control tasks, implying that active stimulation reduces patients' proneness to attentional lapses.

SEQUENTIAL AND SIMULTANEOUS BILINGUALISM AFFECT CHANGES IN NON-VERBAL CONFLICT PROCESSING IN CHILDREN'S BRAINS OVER TIME: AN FMRI STUDY

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Objective: As one of the most prominent changes in cognitive function is the development of language in the first 2 decades of life, we hypothesized that the differences in linguistic skills would affect the general cognitive control in children. In our two year longitudinal fMRI study, the effect of bilingualism and the age and manner of 2nd language acquisition on neuro-maturation of cognitive control process was investigated in children's brain. Simultaneous and sequential bilinguals were compared to their monolingual peers in processing non-verbal conflicts in an fMRI study using a colour-Simon (stimulus-response) paradigm. Simultaneous-bilinguals acquired both languages from birth at home while Sequential bilinguals acquired the second language later at school. We expected that cognitive control tasks would be influenced by the level of language acquisition in children.

Method: 40 children (with the initial age of 96-141 Months (113.5±10.5) and time interval of 19-27 months (22.3±2.3)) were scanned with a 3T MRI system (Philips Achieva Release 2.5), with an 8 channel SENSE head coil. 10 monolinguals, 16 sequential bilinguals and 14 simultaneous bilinguals were included.

A SE-EPI with 130 dynamics was used. (FOV: 212x230 mm², matrix: 104x105, 22-4mm slices, TR:3.

In Simon task red or green squares were shown in a jittered event related design in two categories congruent (position and colour match) and incongruent (position and colour mismatch). The participants were instructed to press the right button for the red figure and the left button for the green.

Analysis Data analysis was conducted based on a general linear model using SPM8 software (Wellcome Department of Cognitive Neurology, London, UK). All functional volumes were realigned, normalized, smoothed (8mm FWHM). For each task, the BOLD signal was modelled by the HRF and its time derivative, including six motion parameters. The magnitude image was calculated based on the combination of basic functions for higher level analysis (Steffener 2010). A second-level analysis (repeated measures ANOVA) was performed with groups as between subject and runs as within- subject factors.

Results: The overall main effect of Runs showed a bilateral decrease in the superior temporal gyrus (STG, BA22) and also a bilateral decrease in the medial frontal gyrus (frontal-superior medial BA9), medial frontal cortex (anterior cingulum BA10) and parietal lobe (BA 40), the left frontal lobe (middle frontal gyrus BA 46), left insula (BA13), left putamen and left superior temporal gyrus.

The interaction results of Run X Group showed activation in left parietal lobe: angular gyrus (Geschwind area BA39); Left frontal lobe (medial frontal gyrus BA9, BA46 and BA10), bilateral decrease in parietal lobe (BA 40)

Conclusion: Cognitive control processes are known to be mediated by the frontal and the temporal lobes. Cognitive functional development of parietal lobe matures by adolescence. Prefrontal cortex function, however, develops into adulthood. The decrease in the activation of language processing and general conflict processing areas might be related to a decreased recruitment of compensatory brain areas as the specialised cognitive control areas become more efficient with age. Importantly, this process seems to have a different rate between bilinguals and monolinguals. As expected, the language conflict resolving areas and also general conflict processing parts of the brain seemed to have specialized functions through development of the brain which leads to different activation patterns between the groups with different linguistic skills while solving conflict problems.

THE IMPACT OF HARM AVOIDANCE ON THE AMYGDALAE RESPONSES TO EXPLICIT PROCESSING EMOTIONAL STIMULI

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Introduction: Brain imaging studies have revealed that individual differences in the neural response during implicit (unintended) processing the emotional content of affective stimuli are related to differences in the personality trait 'harm avoidance' (HA). Given that implicit and explicit (intended) processing emotional stimuli have been found to activate the brain differently, we have performed an fMRI study to explore the difference in neural response during explicitly processing of emotional stimuli between low, average and high HA individuals. This study was focused to the amygdala given their key role in emotional processes in the brain.

Materials and methods: 33 healthy female volunteers (age range: 19-27 years) were asked to rate the valence of positive (happy smiling baby faces) and negative (crying baby faces with a dermatological condition) emotional stimuli during an fMRI scan. All participants completed the Temperament and Character Inventory questionnaire. Based on their HA scores they were categorized into a low (range: 0-10, 10 participants), an average (range: 11-15, 16 participants) and a high (range: 16-25, 7 participants) HA group. The amygdala responses were recorded in a 5mm radius spherical region-of-interest (ROI) positioned at the maximal amygdala responses to the positive and the negative stimuli respectively. A one-way ANOVA was performed to compare the amygdala responses to the positive and the negative stimuli between the groups.

Results: Our results revealed only a significant increased right amygdala response to the negative stimuli in the average compared to the low HA participants. A whole brain analysis revealed a general decreased response to the positive and the negative stimuli in the fusiform, temporal and prefrontal cortex in the low compared to the average and high HA groups. A decreased response in the temporal and prefrontal cortex was found in the high compared to the average HA participants only for the response to the negative stimuli.

Discussion: We hypothesized these results to be related to a reduced sensitivity in low HA individual and an increased avoidance behavior in high HA individual towards negative emotional stimuli. In conclusion, our results support the hypothesis of differences related to HA in the right amygdala response during explicitly rating the valence of negative emotional stimuli.

ETHNIC DISCRIMINATION IN GENERAL PRACTICE?

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Background: There is extensive evidence of health inequality across ethnic groups. Inequity is a complex social phenomenon involving several underlying factors such as ethnic discrimination. In the field of healthcare, it is established that ethnic discrimination partially stems from providers' bias or prejudice. Indeed, it is hypothesized that patient's ethnicity impact on providers' social cognition which modify doctors' social interactions and decisions making.

Objective: To examine if patient's ethnicity impact on doctor behaviour and decision making during the medical consultation.

Methods: A sample of 171 general practitioners (GPs) was randomly allocated to one of the two experimental conditions: a vignette case with a Belgian patient or a vignette case with a Moroccan patient. We evaluated how much time GPs' devoted to examination of medical antecedents; how much time GPs' devoted to examination of socio-relational antecedents; GPs' cardiovascular risk assessment, GPs' electrocardiogram (ECG) recommendation and GPs' drug prescription.

Results: Patient's ethnicity does not clearly impact on GPs' time devoted to examination of medical antecedents; cardiovascular risk assessment and ECG recommendation. However we observed that, ethnicity significantly increases GPs' drug prescription and significantly decreases GPs' time devoted to the examination of socio-relational antecedents.

Conclusions: There is little evidence of GPs discriminating on medical decisions. However when interacting with ethnic minority patients, doctors mainly focused on medical aspects of doctoring and put aside socio-relational dimensions of doctoring. This phenomenon could increase the likelihood of misunderstandings with ethnic minority patients.

Key words: health inequality - ethnic discrimination - doctor interactions and decisions making - misunderstandings during interethnic consultation

DISSOCIATIVE SYMPTOMS AND ATTACHMENT PATTERNS AMONG ADOLESCENT INPATIENTS

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Background: Several studies have demonstrated strong relationships between early insecure attachment and psychopathology during adolescence and early adulthood (Carlson 1998, Lyons-Ruth 2006). Nillson (2011) demonstrated an association between dissociative disorders and attachment styles in a sample of adolescents. Several data about adults have been collected: Riggs (2007) examined attachment and dissociation among inpatients; many of these suffered from childhood psychotraumas (Draijer 1999).

Method: We used two auto-questionnaires: RSQ (relational style questionnaire) with factorial and prototypal analysis and Dissociative Experience Scale (adolescent version: A-DES, cut-off score 4). 75 consecutive adolescent were included: 57 consent to participate. This study is designed to examine the relationship between attachment and psychiatric disorders and especially dissociative syndromes among hospitalized adolescents.

Results: Insecure attachment scores were found for all the sample; 18 adolescent show dissociative syndromes (mean score among dissociative patients A-DES: 5, 29). Dismissing and fearful attachment patterns and avoidance and anxiety in relationships show higher scores among the dissociative patients.

Conclusion: childhood traumas look like causal factors of dissociative syndromes, it could be mediated by attachment parameters.

Key words: dissociative symptoms - attachment patterns – adolescent - auto-questionnaires - childhood traumas

LITHIUM THERAPY OF BIPOLAR DISORDER IN HEMODIALYSIS PATIENTS.

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Background: Because of its nephrotoxic effects and its potential toxicity, lithium is not recommended in patients with impaired renal function. There is little literature regarding the continuation or introduction of lithium treatment in bipolar patients with severe renal failure, especially in regard to chronic hemodialysis patients. In addition, its use tends to decline with increasing use of alternative medications that are primarily anticonvulsants and atypical antipsychotics. However, only lithium and valproate have strong evidence for use across all three phases of bipolar disorder, particularly in the treatment of acute mania and maintenance therapy. Thus, the decision to use or not use lithium in bipolar patients with impaired renal function should be confronted with potential renal and psychiatric consequences. This paper attempts to collect the existing data in the scientific literature with the aim to answer to this question and try to provide a method to use lithium in this specific patient population.

Method: It is a synthesis of published case reports and literature on this subject using mainly electronic databases such as MEDLINE. The keywords used for the search were principally: "bipolar disorder", "kidney / renal disease / failure", "hemodialysis" and "lithium". NICE (National Institute for Health and Clinical Excellence) guidelines were also consulted.

Results: The most severe and dreaded renal complication is the ESRD (End Stage Renal Disease). However, lithium-induced ESRD appears to be relatively rare. In studies, patients with lithium treatment see their eGFR (estimated Glomerular Filtration Rate) slowly and linearly regress, correlated with the time spent on lithium therapy. Discontinuation of lithium should be discussed with a nephrologist when eGFR is <45ml/min/1.73 m² body surface or if proteinuria is high (albumin to creatinine ratio > 70mg/mmol). The treatment has proven effective in the different case reports of patients with chronic hemodialysis three times weekly for doses of lithium carbonate between 300 to 900mg per dose (administered just after each hemodialysis).

Conclusion: Evidence of chronic renal disease is an indication for evaluate discontinuation of the lithium and for consideration of alternative medications. Indications of lithium treatment for bipolar patients in hemodialysis seem to be mainly: failure of alternative medications, past response to the lithium and poor quality of life after stopping lithium. Using lithium in this context requires close monitoring of plasma lithium concentrations before and after dialysis and an administration immediately after each dialysis. Therefore, lithium keeps an important place in the treatment of bipolar patients with maintenance hemodialysis.

Key words: lithium treatment - renal failure - kidney disease – haemodialysis - bipolar disorder

COMPARISON OF HOSPITALIZED DEPRESSED PATIENTS RELATIVES ADMITTED

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Background: A previous study showed an over use of psychiatric emergencies by physicians. Now we study whether patients hospitalized through emergencies have peyoratives pecificationst han patients admitted through consultations.

Method: All patients with Major depressive disorder admitted in our department through emergencies (N=146) or consultations (N=2172) between January 1, 2010 and December 31, 2012 were included in an open study. They completed the Beck Depression Inventory (BDI), analogical visual scales about stress levels (in professional, social, family, married life), life eventsscale over the pastyear and the pastmonth and the Olson Family Adaptation and Cohesion Scale.

Results: The depression ($t=1.438$; $p=0.90$) and stress level in the previous month ($t=1.704$; $p=0.90$) was similar in both samples. Patients admitted through emergencies are characterized by lower levels of marital stress ($t=2.590$; $p=0.01$), higher levels of cohesion ($t=-2.988$, $p=0.003$), higher adaptability of the current couple ($t=-2.975$, $p=0.003$) as well as the adaptability of the family of the origin ($t=-2.504$, $p=0.012$).

Conclusions: If both samples are comparable in terms of stress or severity of depression, patients admitted through emergencies have relatives more supportive and more adaptable! How to explain that they didn't consult before? We propose the hypothesis that physicians and families would be exceeded or over loaded with symptoms they thought they could contain. Forcing them at this point to aim an urgent care of the pathology. On the contrary patients withen vironments less cohesive and adaptable would be redirect edearlier to specialised consultation.

Key words: major depressive disorder – hospitalization – emergency – consultation - family stress level – family cohesion – family adaptability

A DOPAMINE THEORY OF OBSESSIVE-COMPULSIVE DISORDER

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Patients suffering from obsessive-compulsive disorder (OCD) are troubled by thoughts they cannot control. It is believed that the feeling of control and auto-regulation has three components: 1) emotional regulation; 2) executive functions; 3) social cognition. Wegner (2002) assumed that the feeling of control is a basic emotion and emotional regulation determines the authorship of the thoughts and emotions which we experience and of the actions that we undertake. Damasio (2003) believed that motivation is an extra component of the mechanism of emotional control from which feelings and actions spring. Being an interface between sensorium and action, emotions originate from experiencing reward and punishment and help in the choice of behaviours leading to reward while avoiding these leading to punishment. Finally, emotional regulation comprises motivation and executive functions and social cognition are aspects of behavior regulation which requires high cortical cognitive functions.

Stimulus detection and switching between adaptive strategies are both impaired in OCD. Such deficit may produce a feeling of loss of control. They are directly connected to the anatomical structure of the brain, and especially with the cell architecture of the striatum, a key player in the central dopamine neurotransmission which accounts for choice of behavior, defining the salience of stimuli and motivation, as well as for the control over thought and action.

A survey of diverse existing theories of OCD is presented. A new theoretical construct based on the explanation of OC symptoms via the alterations in brain anatomical structures and neurotransmitter function is proposed. The results

from own studies of emotions and cognitive functioning in OCD are put together with data from recent neuroanatomical and neuroimaging studies.

Key words: obsessive-compulsive disorder - dopaminergic striatum - cognition

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THE RELATIONSHIP BETWEEN SUBCLINICAL AUTISTIC TRAITS AND VISUAL SEARCH PERFORMANCE

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Individuals with autism are frequently reported to perform better than neurotypical individuals on visual search tasks. Recent studies investigating individual differences have suggested that scores on the Autistic Quotient questionnaire are predictive of visual search abilities. In this study undergraduate students were tested on conjunctive visual search tasks and undertook the Autistic Quotient questionnaire. Contrary to recent findings, questionnaire scores were not found to predict response times. Individuals with higher levels of autism-like traits were not faster at detecting a target and were as sensitive as individuals with lower levels of autism-like traits to increasing difficulty levels. This finding raises questions regarding the extent to which the Autistic Quotient questionnaire assesses traits associated with visual search abilities.

PROSPECTIVE MEMORY DEFICITS ALONG THE SCHIZOPHRENIA SPECTRUM DISORDERS

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Memory impairment is one of the core deficits in schizophrenia. Previous studies of memory in schizophrenia have been limited to remembering for the past (retrospective memory) without paying specific attention to remembering for future, i.e., prospective memory, in this clinical group. Prospective memory is important for everyday functioning. Recent research has provided empirical findings showing that patients with schizophrenia demonstrate prospective memory impairments. This presentation will explore the memory profiles, prospective memory in particular, of schizophrenic and psychometrically defined schizotypal subjects. Our behavioural data shows that patients with schizophrenia are impaired in all aspects of memory function, whereas the schizotypal subjects tend to show moderate to large impairment effect sizes in prospective memory. More importantly, there is a significant interaction effect of prospective memory type and group. Although patients with schizophrenia are found to show significantly poorer performance on computer-based measures of prospective memory than controls, their level of subjective complaints is not found to be significantly higher. Neural basis of prospective memory performances is also examined with ERP and functional imaging paradigms. Individuals at-risk for psychosis show a hyper-activation in the BA10 region comparing to healthy controls. Taken together, these findings suggest that subjective and objective measures of prospective memory are two distinct domains that might need to be assessed and addressed separately, and that prospective memory may be considered a potential endophenotype of schizophrenia.

TEMPERAMENT IN BIPOLAR AFFECTIVE DISORDER

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Background: Personality traits may help to distinguish between major depressive disorder, bipolar affective disorder type I and II (BAD I and BAD II). The adequate description of personality in BAD is required to identify profiles and traits that may enhance the understanding of the predisposition, clinical presentation, course and outcome of the disorder. Personality traits may turn out to be potential useful endophenotypes in the study of BAD.

The temperament is a stable component of the personality and has a genetic basis. It forms the basic predisposition to a level of activity, affective tonus, mood and to their intensity, reactivity and variability (Akiskal 1995). TEMPS-A is a self-assessment questionnaire which frames questions in the language of affectivity and is rooted in an evolutionary biologic perspective (Akiskal & Akiskal 2005). In contrast to Cloninger's TCI, the clinical validity of the TEMPS-A has been supported on a genetic basis (Gonda et al. 2006, Verweija et al. 2010).

Aims: The present study explored the temperamental distinguishers between groups of depressive patients suffering from BADI, BADII or recurrent major depression (RMD) compared to existing data for the general Bulgarian population (Martinova 2011).

Material and methods: We applied the TEMPS-A to 76 consecutive depressive patients (56 females and 20 males), 19 to 66 years old (mean age 47.8 years). Major depressive episode (MDE) was diagnosed by the DSM-IV-TR criteria and the M.I.N.I. Only patients with at least moderately severe depression (CGI-S \geq 4) were included. Three groups of patients: 1) first MDE (n=16); 2) RMD with at least 5 years duration of illness, no previous (hypo)manic/mixed episodes, and no first-degree relatives with bipolar spectrum disorders (n=23); 3) MDE in patients with well-established BAD diagnosis (n=37; 17 BADI and 20 BADII). Statistical analysis was conducted by using the SPSS-17.0 package (ANOVA, Mann-Whitney test, Pearson correlation).

Results: No significant correlation between age and temperament (neither as absolute value, nor as a predominant type or percentage of deviations from the 2SD interval) was found. Hyperthymic temperament predominated much more in the first MDE than in all the other groups, being very close to its predominance in the general population. At the same time, depressive temperament was significantly less prominent in first MDE than in RMD or BAD. Anxious temperament was more predominant in RMD than in BAD. There was no difference in the prevalence and the mean score for depressive, hyperthymic and irritable temperament between the patients with RMD and those with BD and its subtypes. Cyclothymic temperament was predominant temperament in BAD in comparison with RMD (p=0.041), and especially in BADI (p=0.033).

Conclusions: Our preliminary results suggest that hyperthymic temperament might be a protective factor for the development of chronic affective disorders. Neither the magnitude of the sample, nor the early stage of the analysis and the design of the study itself permit any speculations if the preponderance of cyclothymic temperament in BAD marks it out as a predisposing factor or as a component of the bipolar spectrum.

Key words: bipolar disorder - recurrent depression – temperament - TEMPS-A

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MULTIMODAL BRAIN IMAGING GUIDANCE IN THE TREATMENT OF REFRACTORY HALLUCINATIONS

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Brain-imaging-guided therapy has gained increased interest in recent years. Of note, recent progress in capture-symptom procedures makes possible the identification of the neural correlates of subjective experiences, such as hallucinations. This research is now facilitating a paradigm shift from the fundamental exploration of the underlying neural processes of hallucinatory experiences to the development of innovative therapeutic strategies. The main concept behind these approaches is to modulate the aberrant neural activity levels measured during hallucinations using brain stimulation devices, such as repetitive Transcranial Magnetic Stimulation, to normalize brain patterns linked to psychotic symptoms. The theoretical impact of multimodal MRI guidance will be exposed while preliminary findings will be presented and critically discussed in the context of hallucination research.

THE EFFECT OF DRUG REHABILITATION PROGRAMMES ON PRISONER RECIDIVISM IN MALTA

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Drug abuse is a serious social phenomenon in Malta with the prevalence amongst adults reaching 14% amongst those aged 18-24 years. Besides the well-known harmful effects on the person, substance misuse may also have serious repercussions on society due to the strain on public finances spent on medical interventions, court proceedings, production losses and payment of benefits. However the argument for financing PiPs is compelling in light of various studies establishing the positive effect of such treatment, especially based on the therapeutic community (TC) model, on reducing recidivism. This study examined the impact of TC PiPs on recidivism amongst inmates released from prison between 2005-2008 including the effect of completion of such programs on recidivism as against dropping out. Two comparison groups of inmates who did not attend a PiP or who attended in the past were included in the study. Chi-square tests and ANOVA were employed in the analysis. Although results failed to reject the null hypotheses and PiP participation did not emerge as a significant predictor of recidivism, a number of interesting findings were made. The author discussed the study's limitations including those that may have influenced the results and also made recommendations for future research.

TMS OF DEPRESSION

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Major depression is a worldwide severe mental health problem where unfortunately not all depressed patients respond to the classical treatment algorithms. Some recent research suggests that intensive high-frequency (HF)-repetitive Transcranial Magnetic Stimulation (rTMS) treatment, applied to the left dorsolateral prefrontal cortex (DLPFC), might have the potential to result in fast clinical responses when confronted with a severe treatment resistant depressed (TRD) patient. However, as to how such intensive stimulation protocols might affect deregulated neuronal networks remains largely unclear. In TRD patients, subgenual anterior cingulate cortex (sgACC) functional connectivity (FC) seems to be consistently disturbed. So far, no de novo data on the relationship between sgACC FC changes and clinical efficacy of intensive rTMS were available. To address this question, Twenty unipolar TRD patients, all at least stage III treatment resistant, were recruited in a randomized sham-controlled crossover intensive high-frequency (HF)-rTMS treatment study. (rs) functional MRI scans were collected at baseline and at the end of treatment. HF-rTMS responders showed significantly stronger rsFC anti-correlation between the sgACC and parts of the left superior medial prefrontal cortex. After successful treatment an inverted relative strength of the anti-correlations was observed in the perigenual prefrontal cortex (pgPFC). No effects on sgACC rsFC were observed in non-responders. Consequently, strong rsFC anti-correlation between the sgACC and parts of the left prefrontal cortex could be indicative of a beneficial outcome. Intensive HF-rTMS treatment designs have the potential to acutely adjust deregulated sgACC neuronal networks in TRD patients.

DOES ENQUIRING ABOUT SUICIDE INDUCE SUICIDAL IDEATION?

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Background: Our current knowledge of understanding and responding to suicidal individuals is rather limited. The main difficulty with publishing such papers is gaining ethical approval to conduct the study. The ethical concern that arises, is that participation may induce suicidality. The nature of this article is to review whether enquiring about suicide induces suicidal ideation.

Method: Online databases were searched using terms “randomised controlled trial”, “suicide” and “screening”. 43 articles were identified and analysed for relevance. 7 further papers were found through references in relevant or selected papers from the search. 12 papers were included.

Results: All studies did not find a significant increase in suicidal ideation in participants after being asked about their suicidal thoughts. Moreover suicide education programs, frequent assessment of suicidality and talking about suicide significantly reduced suicidal ideation. Groups that were found to be particularly vulnerable to questions on suicide were participants with a history of suicide attempt, physical and sexual abuse.

Conclusions: There is no evidence to suggest that asking about suicidality leads to increased suicidal ideation. Frequent assessment, education programs and talking about suicide may be a useful tool for screening and addressing suicidal ideation. At risk individuals may be negatively affected by questioning.

Key words: randomised controlled study - randomized controlled study – suicide - screening

NEUROIMAGING BIOMARKERS AND THE DIAGNOSIS OF DEMENTIA

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Dementia is a huge and growing health and social problem, currently affecting over 800,000 people in the UK with numbers set to double in the next 25 years. In older people, the most common cause of dementia (global cognitive decline) is Alzheimer's disease (AD), followed by vascular dementia (VaD) and Lewy body dementia (LBD). Traditionally, dementias such as AD have largely been diagnosed by excluding other brain disorders, such as tumours and strokes, that may cause cognitive decline. Clinical diagnostic criteria based on this approach have been the mainstay of how dementia, including AD, has been diagnosed for the last 30 years.

However, there have been important developments in brain imaging, meaning that changes previously only seen at post mortem can now be visualised in vivo in living subjects. These changes include regional atrophy (volume loss) on magnetic resonance imaging (MRI) which, when in the medial temporal lobe in AD, is correlated with tangle (tau) pathology. It is possible to image vascular disease in great detail, and visualisation of such disease on imaging is a necessary criterion for the diagnosis of VaD. Using functional imaging with single photon emission and positron emission tomography it is now possible to image dopaminergic neurotransmitter loss associated with LBD as well as amyloid burden associated with AD.

These imaging biomarkers have now been incorporated into new diagnostic criteria and are now available in the clinic, allowing ways to more accurately diagnose different types of dementia as well as enabling new research to be undertaken into exactly when different brain changes occur, and how imaging changes relate both to each other and to cognitive decline.

EARLY AGE ON ONSET MAY AFFECT DYSFUNCTIONS IN THOUGHT DISORDER IN PATIENTS WITH SCHIZOPHRENIA

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Objective: Thought disorder is one of the core features of schizophrenia and this encompasses a diverse set of thinking disturbances (Andreasen & Grove 1986). The aim of this study is to investigate the relation between thought disorder and clinical characteristics of schizophrenia such as duration of untreated psychosis, duration of illness and age at onset among patients with schizophrenia.

Method: One hundred-seventeen patients with schizophrenia, diagnosed according to DSM IV criteria, were included into the study. Clinical characteristics of patients were evaluated with psychiatric interview using socio-demographic information form. Thought Language Index was used to determine thought/speech disorder and PANNS was used to evaluate the severity of schizophrenia symptoms. Thought Language Index consist of 2 categories: impoverishment of thought, and disorganization of thought.

Results: There was a negative correlation between age of onset and peculiar sentence construction ($p=0.013$; $r=-0.23$) in schizophrenia patients. Regression analyze also determined that the relation between peculiar sentence construction and age of onset is significant ($p=0.013$; $F=6.359$). There were no relations between Thought Disorder Index items and other clinical characteristics of schizophrenia such as duration of untreated psychosis and duration of illness.

Discussion: We found a negatively strong correlation between age on onset and peculiar construction usage which indicates thought disorganization in patients with schizophrenia. Earlier onset of schizophrenia may be related to formation of unusual sentence structure which is one of the essential elements of speech and thought process.

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RELATION BETWEEN EMOTION RECOGNITION AND ABSTRACT THINKING IN SCHIZOPHRENIA

Yunus Yürür, Hande Daş, Elif Yıldırım, Berna Yalınçetin, Şilay Sevilmiş, Özge Kutay, Tolga Binbay, Halis Ulaş, Berna Binnur Akdede & Köksal Alptekin

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Objective: Affective disturbance is one of the core features of schizophrenia. Furthermore previous studies have found impaired perception of emotion in schizophrenia (Kohler et al. 2010). Social cognition which is a rapidly emerging area of study in schizophrenia, shapes people's relationships with others in their environment. It has been shown that social cognition as well as negative symptoms and cognitive dysfunctions is one of the strong predictors of functional outcome in schizophrenia. Facial affect recognition deficits are one of the social cognition deficits that are frequently evaluated in schizophrenia research. The aim of this study is to investigate the relation between emotion recognition deficit and clinical characteristics such as positive and negative symptoms, insight and thought disorder.

Method: Thirty-eight healthy controls and 53 schizophrenia patients were included into the study. Diagnoses were established according to DSM-IV criteria. Symptom severity ratings were assessed according to the Positive and Negative Symptoms Scale (PANSS). Clinical insight was measured with the Schedule for Assessing Insight (SAI) which has three distinct components: adherence to treatment, recognition of having a mental illness and ability to re-label psychotic phenomena as abnormal. Three emotion recognition tests were used: Penn Emotion Recognition Test (PERT), Penn Facial Discrimination Task (PFDT) and Penn's Emotion Acuity Test (PEAT). Penn Emotion Recognition Test consists of 40 black and white photos each of which depicts one of four emotions: happiness, sadness, anger and fear. Participants are shown these photos and asked to identify the emotions. Penn Facial Discrimination Task rates the ability to discriminate the intensity of sadness and happiness in the photos. In the Penn's Emotion Acuity Test, the subject's task is to rate the photos from very happy to sad.

Results: Patients with schizophrenia had significantly worse performance in emotion recognition tests compared to normal controls ($p<0.001$). Their performance was impaired in every emotion. Overall, there were no statistically significant correlations between emotion recognition and positive symptoms. However errors in the emotion recognition test ($p=0.042$; $r=-0.286$) and emotion acuity task ($p=0.034$; $r=-0.298$) were associated with difficulty in abstract thinking ($p\leq 0.05$). Also there was a strong relation between the emotion recognition total scores and lack of clinical insight

($p=0.036$; $r=0.291$). Regression analysis model using the emotion recognition test scores and the difficulty in abstract thinking symptom from PANSS supported the relation ($p=0.052$; $F=3.154$). There was no correlations between the emotion recognition test scores and clinical characteristics such as age on onset, duration of untreated psychosis (DUP) and duration of schizophrenia.

Discussion: This study showed emotion recognition impairments to be related to difficulties in abstract thinking and lack of clinical insight. Social cognition deficit in schizophrenia patients may be related to negative symptoms. Emotions arise from appraisals of the goal relevance of a stimulus. Social information is very goal oriented. Affect and goals must be inferred from the concrete cues and are therefore more abstract. Thus difficulty in abstraction may affect emotion recognition in patients with schizophrenia.

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TREATMENT OF COMORBID SMOKING CIGARETTES IN SCHIZOPHRENIA PATIENTS

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Life expectancy is approximately 20% shorter than normal population in schizophrenia patients. They generally lose more than 25 years of normal life span. One of the important risk factors causing early death issue in patients with schizophrenia is smoking cigarettes. Comorbid nicotine dependence is very common among schizophrenia patients showing prevalence rates of 60-80% which is 2-4 fold higher than in the general population. Also they smoke "harder" with significantly higher plasma nicotine levels, more puffs per cigarette, shorter puff intervals, and larger puff volumes. Smoking habit may be the result of self medication for negative symptoms or cognitive deficits in schizophrenia. There is a clear evidence that cigarette smoking increase mortality risk in patients with schizophrenia. However patients have lower appreciation for health risks of smoking. Up to date many study results have found modest efficacy of bupropion, varenicline, nicotine replacement therapy, cognitive-behavioral therapy and psychosocial interventions. Bupropion or varenicline treatment combined with nicotine replacement treatment may be effective especially in the first 6-months of treatment compared to placebo in schizophrenia patients, but treatment effect generally decreases with time (George et al. 2008). Therefore new treatment strategies to stop smoking in patients with schizophrenia need to be developed.

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THE IMPACT OF COGNITIVE TRAINING WITH COGNITRAIN SYSTEM ON COGNITIVE PLASTICITY IN PATIENTS SUFFERING FROM SCHIZOPHRENIA

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The aim of this study was to investigate the effectiveness and impact of the Contrain therapeutic method on cognitive neuroplasticity in patients suffering from paranoid schizophrenia. We expected an answer to the question, whether the brain is sensitive to stress and if the efficiency of cognitive rehabilitation improves as a result of using Cognitrain computer training. For this purpose, two groups of test subjects were recruited of patients with paranoid schizophrenia. In the first and second groups double-measurements of short-term memory, selective attention and level of anxiety were made. In one of the tested groups the Cognitrain cognitive training was applied. In order to diagnose mechanisms of memory we used the Free Recall method, CPT method was used to measure selective attention, and STAI was used to determine the severity of anxiety. The patients participating in the Cognitrain trainings gained significantly better outcomes in the neuropsychological assessments than the patients who did not participate in the cognitive rehabilitation.

SOCIAL PHOBIA: UNDERDIAGNOSED AND UNDERTREATED

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Social phobia is an anxiety disorder characterised by excessive fear of negative evaluation in social situations, which are either avoided or tolerated with severe anxiety or distress. The third most common psychiatric disorder, yet it remains largely unrecognised and untreated, (Weiller et al. 1996). A review of literature indicated that, although there has been long standing discussion among researchers, awareness has yet to be translated into wider practice. The poster illustrates, through relating a stylised image, representing an interpretation of a sufferer's perception, which is contrasted with a précised account of current understanding. The main themes derived from this study are the increased risk, secondary to social phobia, of comorbidity and, most recently, substantial quality of life impairment which is evident even in sufferers who do not meet the diagnostic threshold or suffer comorbidity. The evidence of these complicating factors has compounded the need for awareness about social phobia on the part of health professionals. If the condition can be recognised and managed effectively, this could provide the opportunity to reduce the comorbidity risk and improve sufferer's quality of life. Increased use of simple screening questions may help to reduce underdiagnosis and undertreatment.

Key words: social phobia - anxiety disorder – prevalence – comorbidity - quality of life

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HIGH RATE OF TOBACCO CONSUMPTION AND ITS ASSOCIATION WITH GDNF GENE VARIANTS IN THREE ETHNIC GROUPS FROM INDIA

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Background: Tobacco consumption like any other drug is known to produce a sense of well being and euphoria and thus taps the reward related neurotransmitter systems. A wide range of studies have indicated that dopamine release in the nucleus accumbens is responsible for these rewarding effects. Glial cell line-derived neurotrophic factor (GDNF) is an essential growth factor for the survival and maintenance of midbrain dopaminergic neurons. Even though several studies demonstrated association between dopamine and addictions, there are hardly any association studies with GDNF and addictive behavior thus far. India is the second largest consumer of Tobacco 34.6% of the Indian population consume tobacco in any form GATS, 2010 According to the Global Adult Tobacco Survey (GATS) conducted by the Union Ministry of health and family welfare of India, northeast has the highest incidence of tobacco consumption in India with 44.1%, higher than the national average of 35%.

Materials and methods: This study was carried out in a sample of 700 young adults (age range 18-35) in three ethnic groups from the North-Eastern region of India: Bengali (N=200, Caucasian), Hmar (N=200, Mongoloid), Khasi (N=300, Mongoloid). Data on tobacco was collected using personal interview. DNA was extracted from buccal swabs and genotyping of GDNF polymorphism rs3812047, rs11111, rs2910702, rs1549250, rs198184 was carried out by RT-PCR using TaqMan probes.

Results: In case of rs3812047 A/G polymorphism the case-control analysis revealed significant differences between tobacco users vs. non-consumers (allele-wise: p=0.001; OR=0.43. In the three ethnic groups studied 60% of the population consumes tobacco.

Conclusion: This study was done on population from the North Eastern Region of India. Usage of tobacco and areca nut is a culturally learned. The tobacco can be treated in many ways before it is consumption and each population has their own culturally learned way of consuming tobacco. That forms the environmental factor behind high tobacco consumption. A study done by Yoshimura et al. in 2011 reported association between the GDNF rs2910704 variant and the severity of addiction to methamphetamine. Earlier this year our research group has found an association between GDNF polymorphisms and smoking behavior in young Hungarian adults (Kotyuk et al. manuscript). These and the present study indicate that GDNF – probably due to its involvement in development and survival of dopaminergic neurons – plays an important role in tobacco consumption and the level of addiction.

ATTENTION NETWORK HYPOCONNECTIVITY WITH DEFAULT AND AFFECTIVE NETWORK HYPERCONNECTIVITY IN ADULTS DIAGNOSED WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER IN CHILDHOOD

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Introduction and objectives: The neurobiological underpinnings of Attention-Deficit/Hyperactivity Disorder (ADHD) and particularly those associated with persistence of ADHD into adulthood are not yet well understood. Correlation patterns in spontaneous neural fluctuations at rest are known as resting state functional connectivity and could potentially characterize ADHD-specific connectivity changes. We aimed to determine the specific location of possible ADHD-related resting state functional connectivity differences between 16 drug-free adults (5 female, 11 male, mean age, 24.5) diagnosed with combined type ADHD in childhood and 16 healthy controls matched for age (mean age, 24.4) gender.

Methods: Using resting state functional magnetic resonance imaging, functional connectivity from attention, affective, default and cognitive control networks involved in the neuropathology of ADHD were calculated and compared between groups. Connectivity data were correlated with ADHD symptoms derived from ADHD-specific rating instruments.

Results: Adults with ADHD showed significantly decreased resting state functional connectivity within the attention networks and increased resting state functional connectivity within the affective and default mode and the right lateralized cognitive control networks compared to healthy controls ($p < 0.01$, FWE whole brain cluster correction). Lower resting state functional connectivity in the ventral and dorsal attention network were significantly correlated with higher ADHD symptoms ($p < 0.001$).

Discussion: These resting state functional connectivity findings might underpin a biological basis for adult ADHD and are functionally related to persistent inattention, disturbance in cognitive control and emotional dysregulation in adults with ADHD.

Key words: ADHD - fMRI - functional connectivity

OUTCOME OF HOSPITAL TREATMENT OF DRUG ADDICTION IN SLOVENIA – PRELIMINARY RESULTS

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Introduction: In the field of drug addiction treatment, noncompletion and negative outcome is a general problem. Approximately 50 percent of the patients in drug addiction treatment do not complete the first month of treatment. Center for treatment of drug addiction is part of the University psychiatric hospital Ljubljana, Slovenia. Is the only specialized center for hospital treatment of drug addiction in Slovenia. There are detoxification unit -6 weeks of medically supervised detox with substitution drugs: methadone, buprenorfine, buprenorphine+naloxon, SR morphine; the intensive psychosocial treatment unit-8 weeks; 6 months of day center 3 times per week.

Aims: The purpose of the present study was examination of a cohort of patients treated at Centre for treatment of drug addiction at the beginning of the treatment, after three and six months.

Methods: A group of 113 patients consecutively admitted to a closed detoxification unit between October 2011 and October 2012 were assessed. Positive outcome of the treatment is defined as complete abstinence in the 28 days before review. Baseline data were obtained using The Treatment Outcomes Profile (TOP), The Drug Addiction Treatment Efficacy Scale (DATES), urine tests and a semistructured research interview for obtaining information on patient's sociodemographic characteristics. Follow up scores of TOP, DATES and urine tests have been recorded after three and six months.

Results: Fifty-two patients (46%) completed 6 weeks of detoxification program and 28 patients (24.7%) completed 8 weeks of intensive psychosocial treatment. After 3 months 45 of 92 evaluated subjects (48.9%) had a positive outcome, 17 (18%) patients abused heroin and 44 patients (47%) abused other drugs. After 6 months 19 of 67 evaluated patients (28.3%) had a positive outcome, 16 patients (24%) abused heroin and 44 (66%) abused other drugs.

Conclusion: The share of patients with positive outcome peaked at 3 months, however the decreased use of heroin was sustained throughout the observation period.

THE ROLE OF BRAIN-DERIVED NEUROTROPHIC FACTOR IN THE PATHOPHYSIOLOGY OF SUICIDAL BEHAVIOR.

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Suicidal behaviour is a major public health concern. It is known that the pathogenesis of suicidal behaviour involves altered neural plasticity, resulting in the aberrant stress response of the central nervous system to environmental factors. Indeed, altered brain structure and function was found in suicide victims. Neurotrophins are growth factors that are involved in the regulation of structural, synaptic, and morphological plasticity and in the modulation of the strength and number of synaptic connections and neurotransmission. Brain-derived neurotrophic factor (BDNF) the most studied and the most widely distributed among neurotrophins binds to a tropomyosin-related kinase B (TrkB) receptor and to a pan75 neurotrophins receptor. It was reported that a BDNF production is decreased in all patients with suicidal behaviour regardless of a psychiatric diagnosis. Similarly, it was reported that BDNF is decreased in all suicide victims regardless of psychiatric diagnosis. It was also found that the mRNA and protein level of BDNF was significantly lower in both the prefrontal cortex and the hippocampus of suicide subjects. Different mechanisms could be involved in a regulation of a BDNF gene expression. A BDNF Val66Met variant is a known functional polymorphism (rs6265), consisting of the substitution of valine with methionine in codon 66. It has been shown that the Met allele is associated with the reduced BDNF activity. Further, a recent meta-analysis including 12 studies showed a trend for the Met-carrying genotypes and Met allele conferring risk for suicide. Among included studies our study with the largest sample size indicated that the combined Met/Met and Met/Val genotypes of the BDNF Val66Met variant could be the risk factor for violent suicide in female subjects and for suicide in victims exposed to childhood trauma. In accordance with previous reports, our findings demonstrate that aberrant regulation of BDNF synthesis is associated with suicidal behaviour.

PSYCHIATRIC MANIFESTATION OF PATIENTS WITH BRONCHIAL ASTHMA IN MOSUL, IRAQ

Dhiher Jameel Al-Habboo, Khalid Omar Sultan & Hellme Najim

Mosul, Iraq

Background: It has been proven that physical morbidity is related to psychiatric illness. Some physical illness are more related to psychiatric morbidity compared to others. Bronchial Asthma is considered one of them, some physician consider it as psychosomatic illness.

Aims: To identify risk factors and psychiatric morbidity in bronchial Asthma, in order to try to management it and improve outcome of this illness and enhance their quality of life.

Methods: Patients who were referred to the respiratory unit at Mosul Teaching hospital from primary care centres between August 2012 and February 2013 and consented to participate in the study, were checked and if they fulfilled the criteria for the diagnosis of bronchial asthma. They were interviewed and their sociodemographic data were recorded, the hospital anxiety and depression scale was administered. Results were input in a computer programme and software statistical programme Minitab version 14.1 was utilised to analyse these data.

Results: The whole sample was 100 patients. 53 females and 47 males were included. Mean age was 39 years. Mean duration of illness was 11 years. Mean HAD score was 22.

Male patients were a little bit older and scored less in a statistically significant manner on the HAD score compared to females. It showed statistically significant correlation between age, duration of asthma and HAD score.

Discussion: The present study showed that there is a correlation between bronchial asthma and psychiatric morbidity. It has confirmed that females are more affected compared to males, which is expected as compared to the general population.

It has also confirmed that psychiatric morbidity is positively related to bronchial asthma as it showed that the duration of illness has increased the psychiatric morbidity.

Conclusion: Psychiatric morbidity is a neglected area in the management and care of physical illnesses, especially, bronchial asthma, where patients may get very worried and scared during acute attacks when they feel that they may suffocate. Assessing and managing the psychiatric morbidity of such patients will be reflected on the outcome of the illness and improve the quality of life of such patients.

PSYCHIATRIC MANIFESTATION OF PATIENTS WITH EPILEPSY IN MOSUL, IRAQ

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Mosul, Iraq

Background: It has been proven that physical morbidity is related to psychiatric illness. Some physical illness are more related to psychiatric morbidity compared to others. Epilepsy is considered one of them, as patients who suffer from epilepsy have disturbances of consciousness and this leads to a variety of psychological disturbance.

Aims: To identify risk factors and psychiatric morbidity in epilepsy, in order to, try to management it and improve outcome of this illness and enhance their quality of life.

Methods: Patients who were referred to the department of Neurology at Mosul Teaching hospital from primary care centres between October 2012 and February 2013 and consented to participate in the study, were checked and if they fulfilled the criteria for the diagnosis of epilepsy, they were interviewed and their sociodemographic data were recorded, the hospital anxiety and depression questionnaire (HAD) was administered. Results were input in a computer programme and software statistical programme Minitab version 14.1 was utilised to analyse these data.

Results: The whole sample was 100 patients. 55 females and 45 males were included. Mean age was 30 years. Mean duration of illness was 5.5 years. Mean HAD score was 17.

Male patients were a little bit older but there was no statistically significant difference compared to females and they both scored similar HAD scores. There was no difference between urban and rural population with regards to HAD score.

The study showed a statistically significant correlation between age and duration of the illness and HAD score.

Discussion: The present study showed that there is a correlation between bronchial asthma and psychiatric morbidity. It has confirmed that females are more affected compared to males, which is expected as compared to the general population.

It has also confirmed that psychiatric morbidity is positively related to epilepsy as it showed that the duration of illness has increased the psychiatric morbidity.

Conclusion: Psychiatric morbidity is a neglected area in the management and care of physical illnesses, especially, epilepsy, where patients may get stigmatised and traumatised in the society. They may live in constant fear of having a fit. Assessing and managing the psychiatric morbidity of such patients will be reflected on the outcome of the illness and improve the quality of life of such patients.

THE ASSOCIATIONS OF DEMOGRAPHICS, PERSONALITY AND PSYCHOPATHOLOGY IN A COMMUNITY STUDY

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Mental illness is known to significantly impair quality of life, often exerting a greater effect than physical illness. Severity of mental illness, age and gender all seem to be related to quality of life; however, there are a number of uncertainties as to why some persons with mental illness enjoy a considerably greater quality of life than others. There is also controversy as to the relative impairment caused by different mental illnesses. When these factors are considered in the context of the fact that clinicians estimates of quality of life have been demonstrated to be poorly correlated with patients' accounts, this emerges as an important issue for research. In this paper, we present findings from our analysis of the Zurich Study, in which an enriched sample of 591 subjects was followed over a 30-year period. We conducted a multivariate analysis on the associations with quality of life, as measured in 1993 and 2008, considering demographic, psychopathological and personality-related variables. Significant associations were found in various domains, which we discuss alongside possible reasons. In addition, we considered how the correlates of quality of life in those subjects with higher psychopathology differs from the Zurich Study as a whole.

IS THERE A DIFFERENCE IN T2 RELAXATION TIME IN FRONTO-TEMPORAL REGIONS IN THOSE WITH EARLY PSYCHOSIS AND CONTROLS?

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Background: Previous studies have demonstrated that there are reductions in grey matter volume during the earliest stages of psychosis and schizophrenia. These are most pronounced in select frontal and temporal regions such as the anterior cingulate, medial and inferior frontal cortices, superior temporal gyrus (STG), hippocampus, thalamus, and insula. However, the neurobiological processes underlying these changes remain unclear. In an effort to understand what is underlying these changes, T2 relaxometry (an MRI technique) has been used. As a non-specific indicator of neuronal pathology, increases in value have been associated with oedema, demyelination, gliosis and axonal loss. We have previously shown that T2 relaxation time is significantly increased in the left hippocampus of clinical at-risk individuals who developed psychosis. We have further found increased T2 signal in the STG in at-risk individuals specifically experiencing auditory hallucinations. Nevertheless, other regions that we, and others, have demonstrated to be actively changing over the earliest stages of psychosis have not yet been examined.

Aims: To determine whether T2 relaxometry, a non-specific marker of neuronal pathology, is elevated in select frontal and temporal regions (insula and STG) in individuals at the earliest stages of psychosis compared to controls.

Methods: We have obtained T2 relaxometry maps from individuals at ultra-high risk (UHR) for psychosis, first-episode psychosis and healthy controls who have previously participated in our research studies at Melbourne Neuropsychiatry Centre. Regions of interest (ROI) will be traced using ANALYZE 11.0 software blind to clinical diagnosis. T2 relaxometry values will be analysed between-groups using analyses of variance. The UHR group will be further compared between those that transitioned to psychosis and those that did not. Results are to follow for select brain regions.

Hypothesis: We hypothesise that there will be elevated T2 relaxometry time in frontal/temporal brain regions in psychosis patients compared to controls and those who did not later develop psychosis.

Significance: Demonstrating increased T2 signal in individuals who develop psychosis will indicate that there are subtle pathological changes in these areas early in the illness.

THE DILEMMA OF PSYCHIATRIC CARE FOR ADOLESCENTS IN THE ARAB WORLD

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Mental health in the ArabWorld is taking tremendous hits with continuing conflicts. With many regions having more than 35% of population under the age of 18 the region is in dire need for child and adolescent mental health services. Unfortunately many issues prevent developing such services ranging from the notion that children do not have mental issues to scarce number of trained specialists. WHO data showed in some regions there is one child and adolescent psychiatrist to 1000000 population. And in the best areas the ratio would be 1 to 100000. This has raised the issue of children with mental disorders who are cared for by non specialists which is no longer acceptable. Children are the future and to have healthy future adults we need to plan for young population service from now.

BARRIERS IN GETTING GOOD QUALITY MENTAL HEALTHCARE IN TAJIKISTAN AND HOW WHO ARE HELPING TO ADDRESS THINGS:- DESIGNING AND IMPLEMENTING OF A PRIMARY CARE MENTAL HEALTH PROTOCOL

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Introduction: The state of mental health provision in many countries worldwide is often poor, outside of Western Europe and North America. Poorer countries will often neglect the mental health needs of its citizens in favour of other health priorities or non-health issues. I was recently invited to appraise and to help resolve the mental health deficits in Tajikistan.

Background: Tajikistan has a total population of 7 million and covers an area of 64000 square kilometres. The area emerged from the former Soviet Union in 1991 as one of the poorest independent republic. The country has gone through civil war that led to inequity across the regions.

Aims: I researched to explore the possible reasons for why people with mental health problems do not receive good quality care. I looked at internal and external factors as well as other dimensions that could be significant. I was tasked by W.H.O. to help develop the primary mental health strategy. This would include the format of the primary mental health protocol.

Methods: I completed a Google and Pub Med literature search to understand the mental health issues within Tajikistan. I interviewed individuals from inpatient psychiatric facilities, primary care doctors, the department of evidence-based medicine and the university dean as well as people with mental health issues and their carers.

Results and discussion: There is hardly any literature available on Tajikistan. Other lines of enquiry led to numerous important factors. Pre-1991 the psychiatric facilities across the Soviet Union were generally at a comparable and reasonable level. Following independence the investment into mental health has been non-existent. Consequently the state of the mental health unit has deteriorated with lack of maintenance and investment. The current tariff for an inpatient bed reported to me is USD 0.50 per patient per day. The government policy for mental health is weak. There is a growing concern from the public at the rates of suicide in children and young adults.

Current medication utilised are very old ones with unpleasant side effects, and sometimes limited efficacy. The funding for psychotropic medication is very limited and there is no formulary for modern and often costly medication. Electroconvulsive therapy was unavailable due to lack of equipment. Consequently very seriously ill patients cannot always be treated effectively. The newer medication are unavailable, even depot medication is hard to obtain

The stigma to mental illness is significant. There is superstition and often a desire to find a religious or spiritual explanation for a person's symptom. The shame, embarrassment and fear of having mental illness often affects the individual and the family. This is often exacerbated by the reluctance to seek help from doctors, but instead from religious leaders who will often misadvise individuals through ignorance to avoid seeking a medical solution or for financial motives.

The financial situation globally has created high levels of stress and this could account for the noticeable recent increase in suicides. Substance misuse of alcohol and opiates is prevalent.

WHO has addressed this issue in a few stages:

- Firstly to identify and finalise protocol design. This is split into two parts.
 - The first one deciding on the format of the protocol. At a two day workshop to 20 GPs, there was unanimous support for the mhGAP format of manual protocol. This was preferred above that of the old soviet style handbook format.
 - The second part will be one of what level of information to include within the protocol.
- The second stage will be the submission of the proposal to the Ministry of Health for approval.
- This will then be followed by a course of training of trainers to gain the knowledge to train primary care professional to identify and treat a variety of mental health conditions.
- There will be an on-going programme of supervision to ensure that the protocol, is being used appropriately.

Conclusion: The situation in Tajikistan is extremely poor and the reasons complex. mhGAP is an excellent tool in bridging the mental health GAP particularly in low and middle income countries. WHO's involvement is clearly an indication that mental health needs are being recognised and acknowledged as being in need of change. Investment in the infrastructure is required in order to develop the services. The on-going training of primary care mental health clinicians is the most effective and appropriate way of bridging the gap.

**NEUROIMAGING MARKERS FOR VULNERABILITY FOR DEPRESSION:
GENE-ENVIRONMENTAL INTERACTIONS**

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Background: The interplay of genetic and early environmental factors is a recognized factor in the aetiology of major depressive disorder (MDD). We tried to clarify the circumstances of this interaction. Our first aim was to examine whether reduced volumes of hippocampus and frontal regions of emotional regulation are present in unaffected healthy individuals at genetic risk of suffering MDD and to investigate whether early life adversity (ELA) is a contributing factor. As a second aim, we explored whether the unaffected healthy relatives show microstructural changes in white matter fibre connections when we compare them to healthy controls (HC), and whether ELA is an additive factor. The third aim was to determine the effect of Val66Met brain-derived neurotrophic factor (BDNF) polymorphism on the white matter fibre tracts connecting hippocampus and amygdala with the prefrontal lobe in patients with MDD compared to HC.

Method: Study 1: Twenty unaffected first-degree relatives of patients with MDD (FHP: family history positive) and 20 healthy controls (FHN: family history negative) underwent high-resolution magnetic resonance imaging (MRI). Manual tracing of hippocampal sub-regions and voxel-based morphometry (VBM) was used to compare groups and find association to ELA. Study 2: Twenty-one FHP and 24 FHN participants underwent high angular resolution diffusion imaging with 61 diffusion directions. Data were analyzed with tract-based spatial statistics and findings were confirmed with tractography. Study 3: A cohort of 37 patients with MDD and 42 healthy volunteers were recruited for the performance of Diffusion Tensor Imaging (DTI). High angular resolution DTI datasets with 61 diffusion directions were obtained. Deterministic tractography was applied and Val66Met BDNF single nucleotide polymorphism (SNP) (rs6265) was genotyped.

Results: Study 1: FHP subjects with a history of emotional abuse had significantly smaller left and right hippocampal heads. VBM also showed smaller dorsolateral prefrontal cortices (DLPFC), medial prefrontal cortices (MPFC) and anterior cortex cinguli in FHP who had a previous history of emotional abuse. Study 2: FHP showed higher fractional anisotropy (FA) in the body and splenium of corpus callosum, inferior fronto-occipital fasciculus (IFO), left superior longitudinal fasciculus (SLF) and right fornix compared to HC. Those FHP individuals with more adversity in early life had higher FA in the splenium of corpus callosum, fornix, IFO and SLF, while FHN with ELA were found to be associated with decreased FA in those fibre tracts. Study 3: The results of our BDNF-DTI study showed a significant interaction in the uncinate fasciculus (UF) between BDNF alleles and participant group. Patients carrying the BDNF met-allele had smaller FA in the UF compared to those patients homozygous for val-allele and compared to healthy subjects carrying the met-allele. A significant 3-way interaction was detected between region of the cingulum (dorsal, rostral and parahippocampal regions), brain hemisphere and BDNF genotype. Larger FA was detectable in the left rostral cingulum for met-allele carriers when compared to val/valallele carriers.

Conclusion: Study 1: FHP individuals have reduced volume of those brain regions of emotional processing and in particular if they suffered childhood abuse, indicating that ELA might influence brain structure via epigenetic mechanisms and thus structural anomalies may precede the onset of MDD. Study 2: The second study provides evidence of larger FA in FHP, which could be interpreted as a marker of resilience, and evidence of an interaction between ELA and family risk on white matter tracts involved in cognitive-emotional processes. Study 3: The met-allele of the BDNF polymorphism seems to render subjects more vulnerable for dysfunctions associated with the UF, a brain region related to negative emotional-cognitive processing bias, declarative memory problems or auto-noetic self awareness.

SUICIDE METHODS AND PSYCHOTROPIC SUBSTANCES USED AS CONTRIBUTING FACTOR

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Background: Suicidal behaviour represents an important public health problem throughout the world. Alcohol and other psychotropic substances are recognized as an important risk factor for suicidal behaviour on one side and could be used as a suicide method on the other side.

Aims: To describe the types and contribution of psychotropic substances ingested before suicide in combination with suicide methods used in a group of suicide victims autopsied at the Institute of Forensic Medicine in Ljubljana from January 2009 to December 2011.

Method: A retrospective study of forensic records and toxicological data of all autopsies of suicidal deaths investigated at the Institute of Forensic Medicine in Ljubljana, during a 3-year period (2009 to 2011), was performed. Data collected include demographic data, suicide methods used, and data regarding toxicological analysis.

Results: During the study period, a total of 448 cases (14.5%) of the 3099 autopsies performed were attributed to suicide. The average age \pm SD of all suicide victims was 48.9 ± 17.8 years; men were 5-years younger than women with 47.5 ± 17.3 years and 52.9 ± 18.7 years, respectively. Most substances detected were psychotropic prescription medications classified in six categories (antidepressants, sedatives and hypnotics, anxiolytics, antipsychotics, opioid analgesics, and others). Most of the deceased (51.2%) were single-drug users and more than one drug was found in 48.8% of all suicidal deaths. The number of drugs in blood samples varied from 1 to 9 per case. Poly-drug users among suicide victims were relatively more likely to use drug overdose, while single-drug users were more likely to use hanging as the method of suicide.

Conclusions: Toxicology plays a crucial role in the investigation of suicide. Psychotropic substances are strongly associated with suicide, even when the suicide method does not involve drug overdose.

Key words: suicide - methods of suicide – toxicology - psychotropic drugs - overdose

POLARITY INDEX AND THE INDIVIDUALIZED TREATMENT OF BIPOLAR DISORDER

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Due to the episodic and chronic nature of Bipolar Disorder, maintenance therapy represents a critical part of treatment. Clinical practice requires deciding upon the most appropriate treatment for each patient, which constitutes the backbone of the medical act, but is often challenging. In the present speech, clinical markers for response to first-line therapy will be examined. Another recurring issue in clinical practice is given by the difficulty in translating the results of research to therapeutic decision-making. For this reason, our group has recently developed Polarity Index, a metric retrieved by calculating Number Needed to Treat (NNT) for prevention of depression and NNT for prevention of mania ratio, as emerging from the results of randomized placebo-controlled trials, which indicates the relative prophylactic efficacy profile of existing treatments, and its external validity was examined in a naturalistic study. The Polarity Index

provides a measure of how much antidepressant versus antimanic an intervention is in bipolar disorder prophylaxis, in the attempt to predict the most effective treatment for each individual patient. This could represent one of the first steps in the creation of “precision psychiatry” for Bipolar Disorder, with an important impact on patients’ therapeutic management

5-HT_{2A} RECEPTORS: STILL OF ESSENCE IN DEPRESSION RESEARCH?

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The serotonergic system remains one of the main targets of psychotropic drug intervention to treat major depression (MDD). Post-synaptic 5-HT_{2A} receptors are implicated in the pathophysiology of many neuropsychiatric disorders including MDD, and they are implicated in several brain functions related to emotional and cognitive processes. Although widespread throughout the cortex, high densities are especially found in the frontal cortical areas. It has to be noted that in MDD discrepant results in 5-HT_{2A} receptor research have been reported. Recently, we showed that in treatment-resistant MDD patients that 5-HT_{2A} receptor binding indices (BI) were specifically affected in the dorsal prefrontal cortex (DPFC) and anterior cingulate cortex (ACC). These changes in DPFC-ACC 5-HT_{2A} receptor BI could indicate a specific cognitive control problem during emotional processing reflecting an increased vulnerability for depression. In healthy population, we examined the relationship between these 5-HT_{2A} receptors and the temperament dimension Harm Avoidance (HA) personality dimension closely related to stress, anxiety and depression proneness, thought to be mediated by the serotonergic system.

Here, we found a positive relationship between DPFC 5-HT_{2A} receptor BI and individual HA scores suggesting that those individuals with a tendency to worry or to ruminate may display higher vulnerability for MDD. Our findings underline that DPFC 5-HT_{2A} receptors are at least implicated in psychophysiological mechanisms related to stress sensitivity, anticipatory worry and pessimism.

THE PROCESS OF PSYCHOLOGICAL ADJUSTMENT TO MULTIPLE SCLEROSIS: COMPARING THE ROLES OF SELF-EFFICACY, ACCEPTANCE, AND SELF-COMPASSION IN PATIENTS WITH PROGRESSIVE MS

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Background: Multiple Sclerosis (MS) is the most common cause of neurological disability among young adults. Thus, there is a need for effective interventions given that affective disorders are highly prevalent among this population and poor emotional well-being may be associated with neurological progression of the disease.

The current study investigates whether ‘third wave’ therapy constructs were able to offer additional benefits in the treatment of mood disorders in patients with progressive MS, when compared with constructs used in traditional cognitive behavioural therapy (CBT).

Design: Cross-sectional Survey.

Method: Data analysed here were collected from thirty-one people with either primary progressive (N=10) or secondary progressive (N=21) MS.

Results: MS severity accounted for a non-significant 0.3% of the variance in psychological distress ($P>0.05$). Mental representations of self-efficacy and appraisals involving redefining the disease experience through thoughts of self-compassion and acceptance of MS, explained an additional 62.4% of the variance ($P<0.05$), with self-efficacy beliefs and acceptance of MS emerging as the strongest predictors.

Conclusions: This research suggests that appraisal constructs used in contextual therapies and traditional CBT may exert their effect on adjustment outcome through different pathways, which appear to account for similar variances in psychological distress.

Key words: acceptance - psychological distress - progressive multiple sclerosis - self-compassion - self-efficacy

AUDIT AND RE -AUDIT OF ANTI-PSYCHOTIC DEPOT CARDS OF SOUTH ESSEX PARTNERSHIP NHS UNIVERSITY TRUST BEDFORD ASSERTIVE OUTREACH TEAM (AOT)

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Introduction: Clinical guidelines in SEPT strongly emphasize the importance of Intramuscular Anti Psychotic Depot and its record keeping as vital for the effective treatment.

Aim: To evaluate the clinical practice of filling the depot card; this should ideally be 100%.

Method: 23 (n=23) Patient's depot cards from Bedford AOT were audited. Initial Audit (A1) was conducted in Sept 2012. The re-audit (A2) for the same patients were done in Feb 2013. Twenty six entries requires filling in the depot card.

Results: All entries were legible in all the cards. Name of the patients, date of birth, NHS Number, patient's address were filled in 100% of the cards in both A1 and A2. The results of the first Audit revealed that GP's name was filled in 30% (n=7), while GP's address and telephone number were filled in 39% (n=9) and 43% (n=10) of the patient's card respectively. 52% (n=12) of the card had care co-ordinator's name and 86%(n=20) had consultant's name while team's name was filled in 78% (n=18) of the cards. Only 34% (n=8) of the cards gave any information about allergies. Full name of the depot medication was entered in 17% (n=4) while dose, frequency, prescribing doctor's full name, prescribing doctor's signature, date of prescribing, date of starting the depot were all filled in uniformly in 52% (n=12) of the cards. In the re-audit all the above entities were filled in 100% (n=23) of the cards.

The missing entry of date of stopping the last depot if the previous prescription was cancelled within last 6 months, counter signature of a doctor at the end of the last row (if applicable), blank Administration boxes to be crossed through (if applicable) was found to be 47%(n=11),17%(n=4),and 4% (n=1) respectively. These missing entries were not found in re -audit.

Patient's signature in medication discussed space was 21% (n=5) in the first audit and 30% (n=7) in the re audit which was done after 6 months. The patient's signature in side effects discussed space remains 8% (n=2) in both A1 and A2. The previous prescription cancelled with a stamp (if applicable) has not shown any change in re- audit this is due to non-availability of stamp.

Conclusion: It is critical for our AOT services to fill and maintain the depot charts. The documentation of each of the areas is important but not mentioning anything about the allergies is an unsafe practice. The Audit cycle has highlighted that we are still lagging behind in taking the signature of patients after explaining to them the side-effects of the medication. The re -audit has confirmed that we have overcome many shortfalls, but still there is a scope for lot of improvement. In the light of these findings it is recommended that the depot card be modified to suit the needs of Assertive Outreach Patient's. These changes are required to avoid any possible errors while giving the depot as well as to figure out the reasons for any changes in the depot administration to the patient.

Financial sponsorship-No funding received to conduct this audit.

AUDIT OF RECOGNITION, REFERRAL, AND DIAGNOSIS OF CHILDREN AND YOUNG PEOPLE ON THE AUTISTIC SPECTRUM DISORDER

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Background: Autistic spectrum disorder (ASD) in ICD-101 F84 and DSM-IV 2 is defined a group of disorders characterized by qualitative abnormalities in reciprocal social interactions and in patterns of communication, and by a restricted, stereotyped, repetitive repertoire of interests and activities. These qualitative abnormalities are a pervasive feature of the individuals functioning in all social situations. Recent reports³ estimate the prevalence of autism-spectrum conditions in the UK to be 1%.

Aim: The purpose of this audit is to measure current practice in autism: recognition, referral and diagnosis of children and young people on the autism spectrum against the recommendation in NICE guidelines. This will help us to ascertain the current practice in the neurodevelopmental Clinic against NICE guidelines and prioritize implementation of NICE guidance if there are gaps, deficits or room for improvement.

Method: The data were retrospectively collected from 18 patients seen in the CAMH neurodevelopmental clinic over the last one year from June 2012 to June 2013. A base line assessment tool was adapted for data collection according to the NICE guidelines⁴ and individual form was used for each patient to record all the six Autism diagnostic assessment criteria.

Results: According to criteria¹, all patients were seen within 3 months of referral to the service. The criteria 2 which comprised of diagnostic assessment were also met in all cases excluding physical examination and developing a child profile strengths skills, impairments and needs. There were no record of criteria 3 which specifically included general physical examination looking for skin stigmata or neurofibromatosis or tuberous sclerosis, signs of injury, congenital anomalies and dysmorphic features. Criteria 4 and 5, communicating the results of the autism diagnostic assessment with the parents/ carers and GP and criteria 6 which included follow up appointment yielded 100% results although 4 patients did not attend the follow up.

Conclusion: Phase 1 of the audit has shown a major deficit in general and systemic physical examination and room for improvement in developing a child profile. The results were discussed within the team which emphasised the need for the examination room and wood light. A base line assessment tool has been filed in the new patients files both as a prompt and also an instrument to facilitate data collection for re-auditing after six months of implementing the change in current practise.

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THE EFFECT OF PREFRONTAL TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS) ON ATTENTION NETWORK FUNCTION IN HEALTHY HUMANS

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Rationale: Neuropsychological models suggest that deficits in prefrontal attention control mechanisms are involved in the aetiology and maintenance of maladaptive ruminative thinking and dysfunctional worry in mood and anxiety disorders. Transcranial direct current stimulation (tDCS) is a non-invasive brain stimulation modality, which alters cortical tissue excitability through applying a weak direct electrical current via scalp electrodes overlying targeted cortical areas. tDCS may represent an effective treatment option for patients with mood and anxiety disorders. We examined the effect of 20 minutes of 2mA prefrontal tDCS on the efficiency of three attentional networks: alerting (maintaining an alert state), orienting (the selection of information from sensory input) and executive control (resolving cognitive conflict).

Method: 30 healthy volunteers were screened for physical and mental wellbeing and randomized to receive either 2mA active tDCS (anode over left PFC, cathode over right PFC; n=15; 10 females, 5 males; mean age =20.8 years) or sham (control) tDCS (n=15; 11 females, 4 males; mean age =21.5 years). Active and control groups did not differ on standardized questionnaire measures of trait anxiety or attention control, nor baseline measures of state anxiety, alertness, heart-rate or blood pressure. Scalp electrodes were placed bilaterally over prefrontal sites. Participants sat still during the 20 minute double-blind stimulation period. Post-stimulation measures of mood and autonomic arousal were taken before participants completed a modified attention network test (ANT) - a cued reaction time flanker task in which participants make a speeded response to a central arrow target that is flanked by distracter stimuli and cued by either a temporal-onset (alerting) or spatial location (orienting) stimulus.

Results: Executive attention control was significantly greater following active compared to sham prefrontal tDCS ($p<0.05$). Groups did not differ in alerting and orienting network function nor in post-stimulation levels of anxiety, mood and autonomic arousal. Thus the effect of active tDCS on executive control was selective and occurred independently of current mood.

Conclusions: Our findings suggest that 20 minutes of active tDCS over prefrontal cortex is associated with greater executive control in healthy humans. Prefrontal stimulation had a selective effect on executive attention control, and supports evidence from magnetic stimulation and brain imaging studies to implicate prefrontal cortex in attention control. Results suggest that prefrontal tDCS might usefully target deficits in executive attention control that characterize mood and anxiety disorders and could be a useful tool in a clinical population.

QUALITY IMPROVEMENT- CLINICAL RECORD KEEPING AUDIT

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Background: Clinical records are fundamental to the quality and safety of patient care. There is abundant reported evidence of poor clinical records a frequent factor in clinical incidents. South Essex Partnership Mental Health Trust recognises the importance of good quality record keeping and has developed Clinical Record Keeping Policy. This policy describes the generic clinical record keeping standards that apply to all records made by medical, nursing and allied health professionals.

Aim: The audit aimed to determine the quality of record-keeping of case notes in a working age psychiatric ward.

Standards: Standards used were based on those recommended in the Trust Record keeping policy. "Structure and content of Health/Social Care Records" CPG 9(a).

Method: This audit was carried out in January 2013 in Onyx ward, which is 22 beds working age in-patient unit in Luton. The criteria selected were to look retrospectively at last 5 Form 4.1 from the nursing/others notes section, and 5 Form 16.1 from the medical notes section. There were in total 260 entries on form 4.1 and 102 entries on form 16.1 in 18 case notes. Form 1.2 on the front of case notes was inspected for core service user information. No attempt was made to ascertain the accuracy of information recorded on these forms. The data was recorded on a self devised Performa. The standards were set at 100%. In the audit 18 out of 22 case notes were selected. Four case notes were excluded as they did not meet the criteria i-e less than 5 Form 16.1 due to recent admission.

Results: The audit revealed 100% achievement on Standard 1. Patient address, gender and ethnic origin were documented in all case notes. This was followed by 94% in GP name and practice address. We did not perform well on information about next of kin and scored between 88% and 72%. The most poor achievement was 33% in recording GP practice contact telephone number.

The findings In Standard 2 were reassuring. The record keeping almost achieved 100% in all areas except in 7 out of 260 entries made by unqualified staffs which were not countersigned by their qualified colleagues. In Standard 3 there was 100% achievement in all areas except in time of entries and gaps left between entries which were slightly above 90%.

A number of changes were made on the basis of this audit. The reaudit after six months yielded maximum score indicating all the clinical notes were recorded with highest standards.

Conclusions: Change is difficult to implement but not impossible. It does require collaboration between different disciplines i-e medical, nursing and allied health professionals.

A PUBLIC HEALTH APPROACH TO UNDERSTANDING AND PREVENTING VIOLENT RADICALIZATION

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Background: Very recent acts of terrorism in the UK were perpetrated by 'homegrown', well educated young people, rather than by foreign Islamist groups; consequently, a process of violent radicalization was proposed to explain how ordinary people were recruited and persuaded to sacrifice their lives.

Discussion: Counterterrorism approaches grounded in the criminal justice system have not prevented violent radicalization. Indeed there is some evidence that these approaches may have encouraged membership of radical groups by not recognizing Muslim communities as allies, citizens, victims of terrorism, and victims of discrimination, but only as suspect communities who were then further alienated. Informed by public health research and practice, a new approach is proposed to target populations vulnerable to recruitment, rather than rely only on research of well known terrorist groups and individual perpetrators of terrorist acts.

Conclusions: This paper proposes public health research and practice to guard against violent radicalization.

REALITY MONITORING IN SCHIZOPHRENIA

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The cognitive process of discriminating between internally and externally generated information is known as reality monitoring, and an impairment in this ability is linked to the hallucinatory symptoms of schizophrenia in which patients appear unable to fully discriminate between externally perceived information and that which is imagined. This PhD research project is looking at reality monitoring impairment in schizophrenia with the aim of gaining theoretical insight into the disease and informing cognitive models of auditory hallucinations. Several studies are being undertaken focused around a key experiment aimed at assessing whether reality monitoring impairment can be classed as a cognitive endophenotype of schizophrenia, thus placing it in a biological and genetic framework. Functional and structural MRI and connectivity analysis is being used to investigate the neural basis of reality monitoring impairment in patients, first-degree relatives and healthy individuals. Structural MRI scans obtained from healthy individuals and schizophrenia patients are also being analysed to correlate the extent of development of a key structure in the brain's frontal lobe with the severity of an individual's hallucinatory symptoms. This structure, the paracingulate sulcus, has previously been linked to an individual's reality monitoring ability. Further studies are focusing more specifically on a theoretical model of auditory hallucinations that relates reality monitoring ability to the content of an individual's inner speech.

CAN WE PREDICT PSYCHOSIS ONSET? BRAIN TRAJECTORIES, FUNCTIONAL OUTCOMES, AND THE IMPACT OF DRUGS, STRESS AND INFLAMMATION

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The view since the 1980's has been that brain pathology in schizophrenia begins during foetal development and is static. This suggested that identification of abnormalities in patients with established disorder would provide markers for early identification of at-risk individuals. However, the available neuroimaging evidence does not support such a notion. Rather, the evidence indicates that there is neuroprogression at the earliest stages of psychosis (Pantelis et al. 2005), which is also consistent with the clinical picture. Identification of biomarkers at illness onset will be influenced by such changes, indicating that mapping trajectories of change is needed (Pantelis et al. 2005a, 2005b).

Further, while progressive brain changes over the initial phase of illness are consistent with the observed clinical deterioration, there is continuing debate about their validity, and the nature of the underlying neuropathology (Zipursky et al. 2012). I will consider the functional relevance of progressive brain changes, and discuss the contribution of various factors, including the impact of therapeutic as well as illicit drugs, diagnostic heterogeneity, the effects of factors like stress and HPA-axis function, and the role of neuroinflammation in acute illness (Cropley et al. 2013).

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HOT AND COLD DECISION-MAKING AND ‘SMART’ DRUGS

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We need to make decisions all the time in our daily life. Some of these decisions are trivial and we may not even be aware that we are making them. However, some are major decisions which may impact on our quality of life and sense of wellbeing. For example, which university should I go to? Should I marry the person that I am dating? Should I take this new position I have just been offered or stay in my current job?

There are two forms of decision making: ‘hot’ cognition which includes emotional and risky decisions and ‘cold’ cognition which includes rational or non-emotional decisions (Sahakian & Nicole 2013, Roiser & Sahakian 2011). In students, an example of ‘hot’ decision-making could be opting to go out the night before an exam which could affect their exam grade. In contrast, ‘cold’ cognition might include such decisions as how to organise your day in the most effective way or deciding on ingredients for a meal.

In regard to the neural basis of higher level decision-making, the frontal cortex is particularly involved. However, the neural network involved in ‘hot’ decision-making includes important areas such as orbitofrontal cortex whereas the neural network involved in ‘cold’ decision-making includes dorsolateral prefrontal cortex.

In patients with neuropsychiatric disorders, an example of a problem in ‘hot’ cognition could be highly risky behaviour such as when a patient who is in the manic phase of bipolar disorder maxes out their credit cards. In laboratory studies of ‘hot’ decision-making using the CANTAB Cambridge Gambling Task, patients with mania have problems making decisions and also make poor quality decisions, whereas patients with depression are also slow to make decisions probably reflecting their known problems of indecisiveness (see e.g. DSM-IV) (Murphy et al. 2001).

Cognitive enhancing drugs such as methylphenidate were able to reduce risky decision making in some neuropsychiatric disorders including frontotemporal dementia (Rahman et al. 2005) and attention deficit hyperactivity disorder (ADHD) (DeVito et al. 2008). Methylphenidate and other cognitive enhancing drugs, such as modafinil, are able to reduce impulsivity in ADHD and in sleep deprived doctors (Sugden et al. 2012).

There is now an increasing lifestyle use by healthy people of these cognitive enhancing or ‘smart’ drugs. Frequently mentioned reasons for using these drugs by healthy people is that they allow people to stay awake and alert when cramming for exams or when writing long essays, they improve performance in exam situations, they counteract jetlag and they improve motivation for completing tasks that are boring or not very interesting (Müller et al. 2013). The use of ‘smart’ drugs by healthy people raises considerable safety issues since there are no long term studies of these drugs in healthy people. This type of use also raises ethical issues because the effects of this practice on society are still to be determined, for example, are healthy people being coerced into using these drugs? Might they even be forced into using these drugs in the future (<http://royalsociety.org/policy/projects/human-enhancement/workshop-report/>)?

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THE HEALTH OF MEN AND WOMEN TRAFFICKED TO THE UK FOR LABOUR EXPLOITATION

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To our knowledge, this is the first peer-reviewed article to report on the health of men who have been trafficked for labour exploitation. This study analysed data from a case series of anonymised case records of a consecutive sample of 35 men and women who had been trafficked for labour exploitation in the UK and who were receiving support from a non-governmental service between June 2009 and July 2010.

Over three-quarters of our sample was male (77 %) and two-thirds aged between 18 and 35 years (mean 32.9 years, SD 10.2). Forty percent reported physical violence while they were trafficked. Eighty-one percent (25/31) suffered one or more physical health symptoms. Fifty-seven percent (17/30) reported one or more post-traumatic stress symptoms. A substantial proportion of men and women who are trafficked for labour exploitation experience violence and abuse; they suffer physical and mental health symptoms. People who have been trafficked for forced labour need access to suitable support, assessment and treatment. Further research is urgently needed.

OSCILLATORY UNDERPINNINGS OF MISMATCH NEGATIVITY AND THEIR RELATIONSHIP WITH COGNITIVE FUNCTION IN PATIENTS WITH SCHIZOPHRENIA

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Background: Patients with schizophrenia suffer from a range of sensory and cognitive impairments. Mismatch negativity (MMN) is an event-related potential reflecting the neural responses to deviant stimuli. MMN generation deficits have been consistently reported in patients with schizophrenia and investigated as a potential biomarker. However, underlying oscillatory activity of MMN deficits in schizophrenia and the relationship with cognitive impairments have not been investigated in detail. Time-frequency power and phase analyses can provide more detailed measures of brain dynamics of MMN deficits in schizophrenia.

Method: 21 patients with schizophrenia and 21 healthy controls were tested with a roving frequency paradigm to generate MMN. Time-frequency domain power and phase-locking (PL) analysis was performed on all trials using short-time Fourier transforms with Hanning window tapering. A comprehensive battery (CANTAB) was used to assess neurocognitive functioning.

Results: Mean MMN amplitude was significantly lower in patients with schizophrenia (95% CI 0.18–0.77). Patients showed significantly lower EEG power (95% CI -1.02–0.014) in the ~4–7 Hz frequency range (theta band) between 170 and 210 ms. Patients with schizophrenia showed cognitive impairment in multiple domains of CANTAB. However, MMN impairments in amplitude and power were not correlated with clinical measures, medication dose, social functioning or neurocognitive performance.

Conclusion: The findings from this study suggested that while MMN may be a useful marker to probe NMDA receptor mediated mechanisms and associated impairments in gain control and perceptual changes, it may not be a useful marker in association with clinical or cognitive changes. Trial-by-trial EEG power analysis can be used as a measure of brain dynamics underlying MMN deficits which also can have implications for the use of MMN as a biomarker for drug discovery.

Key words: schizophrenia - event-related potential - mismatch negativity - cognition, oscillation

THE MEANING OF PSYCHOTIC EXPERIENCES DEPENDS UPON THEIR CONTEXT

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Psychotic experiences were once thought to be the preserve of the asylum and the realm of the psychiatrist, existing only in the most severe mental illness and being characteristic of schizophrenia. As such, the discovery that psychotic experiences are relatively common in the general population, particularly adolescents and young adults, combined with the adoption of a developmental view of severe mental illnesses led to them being seen as harbingers of schizophrenia. The clinical high risk paradigm has led to service responses focusing on people with such experiences to predict, detect or prevent the development of the disorder and the broader range of psychotic illness. Early detection or intervention services have learned that the young people they see by dint of psychotic phenomena often have kaleidoscopic mental states with prominent mood and anxiety symptoms, including suicidality.

Moreover, research focusing in interventions to prevent transition to psychosis has indicated that few (<10%) of people deemed to be at high risk experience a transition to psychotic syndrome - the term "not at risk mental state" may be just as appropriate. These findings have led to epidemiological and psychometric investigations focusing on birth cohorts and cross sectional surveys of mental health. The evidence to be presented indicates that, in these population settings, psychotic experiences may usefully be seen as part of common mental disorder, alongside the more familiar depression and anxiety symptoms. Item response theory approaches indicate that psychotic experiences indicate common mental disorder in its more severe form but indicate that they measure the same construct, not a distinct entity. This is not to say that our diagnostic constructs of schizophrenia and similar disorders are wrong, but does suggest that we need to see psychotic experiences outside the clinic as part of a range of relatively common psychopathology that may or may not require therapeutic action, independent of any attempt to prevent psychotic illness. DSM-VI may be informed by such scientific insights.

PERCEPTION AND BELIEF IN PSYCHOSIS – A FALSE DICHOTOMY?

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I will discuss the potential value of neuroscientifically-based models of perceptual processing in providing the necessary fundamental insights from which to develop our understanding of psychotic illnesses. Such illnesses are characterised by both abnormal perceptions (hallucinations) and beliefs (delusions). Hitherto, there has been a tendency to treat these as separate phenomena and theorists have argued over whether the fundamental problem lies in anomalous perceptions (with normal inference) or faulty inference acting on normal perceptions. Neither explanation has proven satisfactory and an alternative has been to suggest a need to invoke both disturbed perception and reasoning in order to explain psychotic symptoms.

I would like to highlight the possibility that more comprehensive models of perceptual processes offer a satisfactory rapprochement in that they dispense with a simple distinction between perception and inference, modelling human experience, learning and belief rather in terms of hierarchically arranged circuits entailing both feedforward and re-entrant connections at different levels of inference. Such models may offer profound insights into mental illness, providing a powerful explanatory framework in which a single deficit, operating at multiple levels, may account for the wide range of experiences that characterise the psychotic state.

KYNURENINES AS THE HEART OF IMMUNE-NEUROCHEMICAL NETWORK IN PSYCHIATRIC DISORDERS: PRESENT STATE AND FUTURE PERSPECTIVE

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Psychiatric disorders are reported to be associated with chronic mild immune activation in addition to the neurochemical changes such as serotonergic, nor-adrenergic, GABAergic and glutamatergic neurotransmissions. The downstream metabolites from the tryptophan degradation pathway, the kynurenines play a central role as a link between immune activation and other neurochemical changes. Evidences of the imbalances in the immune response and the kynurenines are observed in major psychiatric disorders in terms of the changes in the blood, the cerebrospinal fluid and the brain. Some psychotropic medications could modify the imbalances although the modification was not sustained in the long term. Some markers indicated the response to treatment with some particular medications. Moreover, some kynurenines are associated with severity of the symptoms and suicide. Involvement of immunogenetic component was also observed in depression. How shall we proceed with these findings in the future of psychiatry?

THERAPEUTIC COMMUNITY- DO WE NEED THIS KIND OF TREATMENT NOWDAYS?

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Therapeutic community has a long history as a therapeutic concept and a model within psychiatry and beyond. It is a model which was applied before the anti-psychiatric movement, but promoted the idea that everybody has an equal role, that everybody shares responsibility and has his own power to help himself and to help other people. Nowadays it is usually used as a treatment model for abuse disorders, personality disorders and stress and trauma related disorders. At the same time, evidence based medicine and specific interventions tend to take over complex treatments like therapeutic community which contains a complex set of relations and interventions. In this paper I will try to discuss: How to use the advantages of each method? What is a good balance between old and new? How to make interventions psychotherapeutic? How to apply the principles of T.C. in a profit oriented society?

NEUROBIOLOGY OF SUICIDAL BEHAVIOUR

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"About one million suicides and ten million suicide attempts occur worldwide every year. Our current knowledge about the neurobiology of suicide is still limited. Molecular basis of suicidal behaviour is assumed to involve the changes in different neurotransmitter and neuroendocrine systems. Some studies indicate serotonergic hypofunction, alterations in noradrenergic system, or even dysfunction of the dopaminergic system. Therefore, research on suicide, which is the major and most dramatic consequence of suicidal behaviour, should be linked to biological characteristics of suicidal behaviour, to find biomarkers that might predict suicidal behaviour, in order to prevent suicide."

ABNORMALITY IN THE NEURAL CORRELATE OF SELF-AGENCY EXPERIENCE IN FIRST-EPIISODE SCHIZOPHRENIA PATIENTS. A FMRI STUDY

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Disturbance of the basic sense of self may be a core phenotypic marker of schizophrenia spectrum disorders. Impaired attribution of agency of action or mental activity is associated with phenomenology of positive symptoms inherent to this category of mental disorders.

Objective: Using functional magnetic resonance imaging, in conjunction with a mixed-blocked and event-related design, we examined patterns of neural activity during "Aha" experience of self-agency in first episode schizophrenia-spectrum patients.

Methods: 23 patients and 29 healthy individuals underwent whole-brain 3T fMRI scans while performing a motor task with temporal distortion of visual feedback of one's own movements.

Results: Between-group comparison revealed increased ACC and precuneus activation during self-agency "Aha" experience in controls relative to patients. Despite comparable between group difference in behavioral performance, the patients demonstrated no significant within group BOLD effect.

Conclusion: The results suggest that emergent self-agency experience may result in the recruitment of different compensative neural networks in patients with schizophrenia compared to healthy controls.

INFORMATION TECHNOLOGY AIDED RELAPSE PREVENTION PROGRAM IN SCHIZOPHRENIA

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The ITAREPS system (Information Technology Aided Relapse Prevention Program in Schizophrenia) developed in Czech Prague Psychiatric Center, presents a mobile phone-based e-Health solution for weekly remote patient monitoring and disease management in schizophrenia and psychotic disorders in general. The program provides health professionals with home telemonitoring via a PC-to-phone SMS platform that identifies prodromal symptoms of relapse, to enable early intervention and prevent hospitalizations.

The web-based interface offers authorized physician a longitudinal analysis of the patient's dynamics and development of possible prodromes.

This work presents findings from a two mirror-design follow-up evaluations and two RCTs carried out with the program.