The findings of systematic reviews covering cognitive remediation approaches differ considerably depending on the methodological rigor of included studies and the cognitive function targeted. The present meta-analysis provides support for small to medium improvements in attention, executive functioning and social cognition tasks, indicates small reductions in negative symptoms and a moderate transfer effect on social functioning. However, the durability of the effects remains unclear since follow-up data are missing.

ECT practice in Australia

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Objective: To determine the characteristics of electroconvulsive therapy (ECT) practice in Australia.

Method: From October 1, 2002 to February 29, 2004, a 29-item questionnaire was sent to 136 hospitals in Australia.

Results: 113 hospitals (83%) completed the questionnaire. ECT was available in 90 hospitals. A total of 7,469 patients received 58,499 ECTs from 356 psychiatrists, which gives an average course length of 8.5 treatments. ECT utilization as assessed by the crude treated-person and crude administration rates were 37.85 persons and 296.47 administrations per 100,000 population per annum, respectively. 63.4% of patients were female. Brief-pulse devices were used in all hospitals. EEG monitoring was used routinely in 80 hospitals. Unilateral ECT was used twice as often as bilateral ECT. 82.3% of ECT treatments were given to patients with major depression, 9.6% with schizophrenia, 4.9% with mania, and 1.7% with catatonia. Patients who received ECT were in age group over 65 years (38.4%), followed by 45-64 years (28.3%), 25-44 years (26.3%), 18-24 years (6.9%), and less than 18 years (0.2%). Unmodified ECT was not used in any hospital. 1,196 patients received continuation ECT in 83 hospitals and 1,044 received maintenance ECT in 77. There was no case of ECT-related death during a survey period.

Conclusion: ECT use in Australia is high. ECT training programs for psychiatry residents were acceptable. The pattern of use is similar to that of the United States.

ECT practice in Asia

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Objective: To obtain information on ECT practice in Asia.

Method: From September 1, 2001 to August 31, 2003, a 29-item questionnaire was sent to 977 institutions in 45 countries in Asia.

Results: 334 institutions (34%) in 29 countries replied, of which 257 institutions in 23 countries had ECT. 39,875 patients (men: women = 1.56: 1) received 240,314 ECTs from 1,919 psychiatrists during the survey period. Brief-pulse device was used in 103 institutions, 60 did not know the type of their ECT devices. Thymatron or MECTA devices were used in 58 institutions, 115 respondents did not know the brand of their ECT devices. EEG monitoring was used routinely in 59 institutions. Bilateral ECT was always used in 202 institutions. Patients commonly received ECT were schizophrenia (41.8%), major depressive disorder (32.4%), mania (14%), catatonia (6.9%), drug abuse (1.8%), and dysthymia (1.6%). 26,167 ECTs (73%) were given to patients age group 18-44 years, 2,138 ECTs (5.4%) to children and adolescent, and 1,581 ECTs (4%) to age group 65 and above. 22,194 patients (55.7%) received unmodified ECT totally of 129,906 treatments (54%) at 141 institutions in 14 countries. Continuation ECT was done in 115 institutions in 17 countries and maintenance ECT was done in 63 institutions in 14 countries.

Conclusions: ECT is commonly practiced in Asia. Unmodified ECT accounted for 54% of treatments. There was no formal training in any institution.

A prospective study of metabolic disease and monitoring practices in antipsychotic-treated community psychiatric patients

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Background and aims: Recent guidelines and consensus statements recommend stringent monitoring of metabolic function in individuals receiving antipsychotic drugs. We aimed prospectively to study the evolution of metabolic dysfunction in a cohort of antipsychotic-treated subjects with severe mental illness from across the diagnostic spectrum. We also investigated monitoring practices for metabolic disease and cardiovascular risk.

Methods: A prospective cohort study of 106 community-treated psychiatric patients from across the diagnostic spectrum from the Northeast of England. Detailed anthropometric and metabolic assessment was undertaken.

Results: A high prevalence of undiagnosed and untreated metabolic disease was present at baseline assessment. Mean follow-up time was 599.3 (SD $\pm$ 235.4) days. Body mass index ($p<0.005$) and waist circumference ($p<0.05$) had significantly increased at follow-up, as had the number of individuals who were either overweight or obese. Fifty-three per cent of individuals had hypertriglyceridemia, and 31% had hypercholesterolemia, but only 7% were receiving lipid-lowering therapy. A number of individuals on 'high risk' drugs with regard to glucose homeostasis disorders reverted from impaired fasting glucose to normoglycemia during the follow-up period. Monitoring practices were poor. Recording of measures of adiposity occurred in 0% of individuals, and >50% of subjects had neither blood glucose nor lipids monitored during the follow-up period.

Conclusions: This cohort has a high prevalence of metabolic disease and heightened cardiovascular risk. Despite the publication of a number of recommendations regarding physical health screening in this population, monitoring rates are poor, and physical health worsened during the 19 month follow-up period.

Assessing the needs of pregnant women and mothers with severe mental illness

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Background and aims: There is an absence of instruments to assess the complex needs of pregnant women and mothers with severe

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mental illness. We aimed to develop a standardised assessment of need for pregnant women and mothers with severe mental illness.

Methods: Staff and service users identified relevant domains of need. Professional experts and service users were then surveyed and asked to rate the importance of the domains of the CAN-M (Camberwell Assessment of Need – Mothers). Reliability was established using 36 service user-staff pairs. Concurrent validity was assessed with the Global Assessment of Functioning.

Results: Inter-rater and test-retest reliability coefficients for unmet needs indicated excellent reliability. Relevant CAN-M domains correlated with the Global Assessment of Functioning symptom ($p=0.05$) and disability ($p<0.01$) subscales.

Conclusions: The CAN-M is a reliable, valid instrument for assessing the needs of pregnant women and mothers with severe mental illness.

Nicotinic cholinergic mechanisms in the regulation of brain DNA-methyltransferase 1 (DNMT1) expression

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Perturbation of epigenetic mechanisms, which is likely associated with an overexpression of DNA-methyltransferase 1 (DNMT1)in telencephalic GABAergic neurons of schizophrenia (SZ) patients, participates in the pathophysiology of cognitive disorders.

We hypothesize that tobacco abuse, which is very frequent in SZ patients, may be an attempt to self-medicate cognitive dysfunction by reducing DNMT1 overexpression.

In mice treated with nicotine (4.5mg/kg/sc twice a day for 5 days) and decapitated 2,4,8,12 or 24 hrs after the last dose of nicotine, we counted the number of DNMT1 mRNA- and protein-positive neurons in various brain areas using a two-dimensional counting method.

Mice receiving nicotine exhibited a 30-40% decrease in the number of DNMT1 mRNA- and protein- positive neurons in layers I and II of cingulate, piriform, somatosensory cortices and caudate-putamen. A single dose of nicotine causes only marginal changes in DNMT1 mRNA expression.

The high affinity nicotinic receptor antagonist mecamylamine (2mg/kg/sc twice a day for 5 days)given along with nicotine attenuates the nicotine-induced decrease of DNMT1 mRNA-positive neurons in various brain areas.

We also found that cortical layer I and hippocampal GABAergic neurons include high levels of $\alpha 4$ and $\alpha 7$ nicotinic acetylcholine receptor (nAChR)subunits which can then mediate the action of nicotine on GABAergic interneurons. The observation that repeated injections of nicotine decrease the DNMT1 mRNA and protein expression in telencephalic layer I and II cortical GABAergic neurons suggests that in these neurons, nAChR may have an impact on the epigenetic modulation of chromatin remodeling.

Correlation between serum androgen levels and neuropsychological functions in schizophrenia

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Background: Older literature had repeatedly documented that physically frail male schizophrenics tended to be withdrawn with apathy, blunted affect and poor prognosis. However, in female schizophrenics, signs of virilism portend poor prognosis and severe deterioration. Three published studies of 92 male schizophrenics, from India, Iran and Japan, showed negative correlations between testosterone (T) levels and negative symptoms.

Methods: Twenty-eight (18 male and 10 female) patients, aged 25-67 (mean=34.8) years, who fulfilled DSM-IV TR criteria for schizophrenia were selected, with the approval of local ethical committee. Serum levels of T, dihydrotestosterone and DHEA were estimated by radioimmunoassay. Neuropsychological tests were administered for each patient. Pearson correlation test, linear regression analysis and independent 't' test were used for statistical analysis.

Results: Mean PANSS score for all 28 patients was 82.3; 18 patients had predominantly positive symptoms and 10 had predominantly negative symptoms. Independent 't' test did not show any significant difference for any of the serum hormone levels between the groups of patients based on PANSS scores. However, when women were excluded, T levels were significantly lower in negative symptom dominant group ($p=0.05$). A correlation between serum T levels, but not of other hormones, and the total scores on all neuropsychological test results was also noted ($p=0.017$); verbal fluency showed the greatest correlation, followed by working memory. But when women were excluded, this significance disappeared.

Conclusions: Negative symptoms correlate negatively with T levels, but only in men. Neuropsychological findings correlate with T levels as well.

Functional dissection of SLITRK1 signaling

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Background and aims: Tourette syndrome (TS) is a neuropsychiatric disorder characterized by motor and vocal tics and associated complex behavioral abnormalities. There is strong support for a genetic basis to the disorder, however, the precise pattern of transmission and the identification of underlying genes has remained elusive. Recently, mutations in a gene termed SLIT- and NTRK-like family, member 1 (SLITRK1) have been shown to lead to rare forms of TS and associated disorders. The SLITRK family (SLITRK 1-6) includes neuronal transmembrane proteins that can control neurite outgrowth. Structurally, SLITRK family members are characterized by two leucine-rich repeat (LRR) domains located on the extracellular/intralumenal domain, a single transmembrane domain, and an intracellular/cytoplasmic domain that is of varying lengths. SLITRK1 has a cytoplasmic domain that is most different from the others, being both the shortest (53 amino acids), and lacking conserved potential sites of tyrosine phosphorylation. We are using molecular methods to dissect SLITRK1 signaling and metabolism.

Methods: We developed a bait from the human SLITRK1 protein and used it to screen libraries for SLITRK1-interacting proteins. In addition, we studied the metabolism of SLITRK1 in situ.

Results: We completed screens of both an adult and a fetal brain library and are characterizing the validated SLITRK1-interacting proteins. We have also characterized SLITRK1 metabolism and the effects of SLITRk1 mutations on its metabolism.

Conclusions: SLITRK1-interacting proteins may represent susceptibility loci for TS and related disorders, and are likely involved in the development of the central nervous system.

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