

**Results:**

- Epidemiology
    - Origin — 65% African Somalian, 25% African, 18% other
    - Sex — 94% males, 6% females
    - Age — 20 to 36 year olds
    - Past Psychiatric History — 12.5%
    - Family History — Unknown.
  - Prognosis
    - Sever Khat abuse prior to episode — 94%
    - Rapid resolution — 88%
    - Recurrence of illness with Khat abuse — 62.5%
    - Treated with neuroleptic and recovered — 75%
    - Spontaneous recovery — 25%
  - Clinical Picture
    - Orientation & Consciousness — 62.5% N/R 37.5%
    - Aggressive Symptoms — 68.75%
    - Manic Symptoms — 56.25%
    - Paranoid Delusions — 68.75%
    - Grandiose Delusions — 31.25%
    - 1st Rank Symptoms — 25.00%
    - Auditory Hallucinations — 43.75%
    - Tactile Hallucinations — 6.25%
    - Olfactory Hallucinations — 6.25%
- Conclusion:** Khat induced psychosis — prominent in African ethnic groups and males in their twenties.
- More likely for heavy abusers to acquire psychotic symptoms and become hostile. Most patients respond to neuroleptic treatment within two weeks and others recover spontaneously if they stop abusing Khat.

**ECOLOGY OF PSYCHOTHERAPY. A VIEW FROM THE PROVINCES OF RUSSIA**

Igor Yudin. *Independent Medical Company "Health & Future" Komsomolskaya 128-33, Oryol, 302016, Russia*

In my report I would like to discuss the influence of professional activity on the quality of life of a psychotherapist in the Russian provinces.

I would also like to look at some models of psychotherapy, such as:

- Healthy psychotherapist–healthy client;
- Healthy psychotherapist–sick client;
- Sick psychotherapist–healthy client;
- Sick psychotherapist–sick client.

I would like to answer the following questions:

- How should one solve the problems of the client: either for the client, apart from the client, at the expense of the client, or together with the client?
  - How can a psychotherapist work without getting burned out?
  - What are the peculiarities of working with transfer and counter-transfer in the Russian conditions?
  - Is psychotherapy in Russia a science, an art or an occupation?
  - How long should one study, for how long should one get treatment?
- Happiness and psychotherapy — is it possible?

**P5. Schizophrenia, antipsychotics and neuroimaging****PHENOTYPIC AND FUNCTIONAL CHANGES OF IMMUNE REACTIVITY IN SCHIZOPHRENIA AND DEPRESSION**

M.T. Abou-Saleh. *Department of Psychiatry & Behavioural Sciences, United Arab Emirates University, P.O. box 17666, Al Ain, U.A.E.; Faculty of Medicine and Health Sciences, United Arab Emirates University, P.O. box 17666, Al Ain, U.A.E.*

There is growing evidence that psychoneuroimmunological interactions contribute to the pathogenesis of depression and schizophrenia. We have initiated a comprehensive study of phenotypic and functional determinants of immune reactivity in 60 patients with these conditions and 30 normal control subjects. The study involved screening of the subpopulation of immunocompetent (CD3<sup>+</sup> T, CD15<sup>+</sup>B, CD4<sup>+</sup> and CDB<sup>+</sup>T) cell subsets, NK cells and monocytes. Further, we determined the level of proinflammatory cytokines (IL-1, TNF- $\alpha$ , IL-6), and a marker of T-cell activation (soluble IL-2 receptor) in the serum, and analysed the production of immunoregulatory cytokines (IL-2, IL-4, TGF- $\beta$ ) in unstimulated and in vitro Con A stimulated lymphoid cells. Initial evaluation revealed significantly increased monocyte counts and serum levels of soluble IL-2 receptor in the patient group ( $p < 0.01$ ). These findings support the notion of enhanced monocyte and T cell reactivity indicating the role of altered cell-mediated immune reactions in schizophrenia and depression. More detailed analyses of the relationships between well defined clinical types of these disorders and measured immunological parameters are undertaken and the results will be presented.

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**MAGNESIUM DEFICIENCY IN PATIENTS WITH SCHIZOPHRENIA**

M.W. Agelink<sup>1</sup>, T. Zeit<sup>1</sup>, R. Malessa<sup>2</sup>, E. Kamcilli<sup>1</sup>, E. Klieser<sup>1</sup>. *From the Department of Psychiatry, EvK Gelsenkirchen, Munkelstr. 27, 45879 Gelsenkirchen; <sup>1</sup> University of Bochum and <sup>2</sup> Department of Neurology, University of Essen, Hufelandstr., 45131 Essen, Germany*

**Objective:** To compare blood serum concentrations of magnesium, copper and zinc in schizophrenic patients and in healthy subjects.

**Methods:** We evaluated serum Mg, Zn and Cu concentrations in 24 strictly selected drug-free patients (diagnosis were made according to DSM IV™ mean age 36.8  $\pm$  12.1) and in 23 healthy controls (mean age 30.8  $\pm$  5.4). In eight patients treated with oral haloperidol additional blood samples were available after therapy.

**Results:** Mean Mg, Zn, and Cu levels at baseline are illustrated in the table:

Trace element	Controls (n = 23)	Patients (n = 24)	Man-Whitney-T.
Mg (mmol/l)	0.91 $\pm$ 0.07	0.86 $\pm$ 0.07	p < 0.05
Zn ( $\mu$ g/dl)	107.2 $\pm$ 18.7	96.2 $\pm$ 13.4	p < 0.07, ns
Cu ( $\mu$ g/dl)	126.1 $\pm$ 31.5	121.1 $\pm$ 23.9	p < 0.90, ns

Multivariate analysis (MANCOVA) including the factors of diagnosis and sex with age as a covariate demonstrated that schizophrenia was independently associated with low Mg levels ( $p < 0.01$ ). There was a trend toward higher serum Zn levels in male compared to female subjects. Neuroleptic therapy was associated with asigificant

increase in the mean Mg concentration and with clinical improvement in 75% of the cases.

**Conclusion:** Mg may be involved in the pathophysiology of schizophrenia. Longitudinal studies are warranted to clarify whether determination of serum Mg concentrations might be useful in monitoring treatment effects.

### SCHIZOTYPY AND LEADERSHIP: AN ATTEMPT TO DEFINE A CONTRASTING MODEL FOR SCHIZOPHRENIA

A.G. Alias. *Chester Mental Health Centre, Box 31, Chester IL 62233, U.S.A.*

Manfred Bleuler had suggested that nearly all schizophrenic (Sziec) mechanisms can be found in normal people, and the development of the fundamental nature of schizophrenia (Sz) is being conceived as a quantitative variation from an arbitrary normal mean. While the well known theories on Sz are based on models that simulate its psychopathology, I happened to sense a vivid contrast between the cognitive style of a typical ectomorphic, male szic evolving from a schizoid personality with only minimal positive symptoms, and that of a highly dominant, charismatic and persuasive leader (Alias A.G., *Lancet* II: 1248–9, 1972; *Biol Psychiat* 9:61–72, 1974). There is broad consensus that slow information processing is a fundamental defect in Sz. In contrast, numerous studies have correlated leadership with the speed of information processing. Further, subnormal motor co-ordination with neurological soft signs are often present in regressed szics, as well as in many latent szics. A relationship between cerebellar and basal ganglia functions and cognitive processes, and a role of neocerebellum in rapidly shifting attention, which appears to be defective even in latent szics, have been demonstrated. The cognitive styles, including a proficiency to quickly shift attention, of John F. Kennedy, Napoleon, and Julius Ceasar are used as examples of contrasting models, so are those of Bob Hope, as is Mustapha Kemal, for his superior motor co-ordination.

### THE PSYCHOPATHOLOGY OF MADNESS: AN ANALYSIS OF THE RELATIONS BETWEEN PSYCHOTIC SYMPTOMS

V.Y. Allison-Bolger. *North Lakeland Healthcare, Garlands Hospital, Carlisle, Cumbria, CA1 3SX, England*

Although syndromes and subtypes have been identified in schizophrenia individual patients can have symptoms typical of different subtypes. Syndromes are not mutually exclusive. The purpose of this study was to test a hypothesis explaining why symptoms tend to associate or dissociate. In contrast to large scale statistical analyses it was based on detailed psychopathological analysis of patients' descriptions of their experiences. The case notes of 48 patients were examined. Psychotic (mainly first rank) symptoms were identified using SCAN definitions and assigned a code letter. Twenty-seven cases with a full data set were included in the numerical analysis. This showed that whilst almost any symptom could occur with any other they tended to segregate into two groups. These were similar to Liddle's disintegrative and integrative reality distortion syndromes. Symptoms within any one group tended to associate with each other and not with symptoms in the other group. The main hypothesis was that traditional symptoms are descriptions of sensations. The type of description the patient makes is shaped by her basic attitudes. Thought insertion, auditory hallucinations and passivity phenomena were found to be descriptions of a basic experience called the GHE-complex mediated by the JK-attitude. The sensation is a subjective change in the perception of one's thinking. The attitude relates either to the sense of personal agency or to the recognition of ambiguity.

### VERBALIZED VERSUS SILENT WORD PRODUCTION: ACTIVATION STUDY WITH H<sub>2</sub><sup>15</sup>O

E. Artiges<sup>1</sup>, M. Verdys<sup>1</sup>, B.M. Mazoyer<sup>2</sup>, M.J. Giraud<sup>1</sup>, H. de la Caffinière<sup>2</sup>, L. Mallet<sup>1</sup>, L. DiGiambardino<sup>1</sup>, A. Syrota<sup>2</sup>, J.L. Martinot<sup>1</sup>. <sup>1</sup>INSERM U334, SHFJ-CEA, 91406 Orsay, France; <sup>2</sup>CEA-DRM, Orsay, France

The verbal fluency (VF), a neuropsychological task impaired in patients with schizophrenia, has been used previously to investigate the brain regions involved in covert word generation. In its original form, the VF task requires the subject's to retrieve, and verbalize categories of words. In order to investigate the regions involved in the control of word verbalization, we studied the cerebral regions engaged in verbalized, silent VF, and in a free word association task, allowing more spontaneous changes in the course of word associations. Moreover, the relationship between individual verbal performances and the brain areas challenged were studied.

**Subjects And Methods:** 14 male control subjects, right-handed, aged 18 to 34 were studied. Anatomical data were acquired by MRI. Normalised regional Cerebral Blood Flow (NrCBF) was measured using a positron tomograph with the H<sub>2</sub><sup>15</sup>O method, in 2 runs of 3 conditions: rest, verbal fluency, free word production. In addition, 8 of the subjects were studied during silent VF. The words verbalized during images acquisition were tape-recorded, duration and inter-word pauses times were quantified with a computer. Anatomical cerebral regions were drawn according to gyri limits, and copied to registered PET images. NrCBF values were analyzed with MANOVA and post-hoc t-tests. Relationships between the audio data and NrCBF were examined with Pearson's correlation statistic.

**Results:** During verbalized VF vs rest, NrCBF significant increases appeared in Broca's area, left superior and middle frontal gyri, supplementary motor areas bilaterally, inferior left precentral and postcentral gyri, both putamen and cerebellum. During silent VF vs rest, the preceding regions were activated except Brodmann's areas 8, left putamen, and cerebellum. In the silent VF vs verbalized VF comparison, NrCBF increased in right supplementary motor, left inferior precentral gyrus, left Brodmann's area 46, and left temporal pole. During free word production vs verbalized VF, NrCBF increased in the left anterior frontal gyrus, left Brodmann's area 6, right supplementary motor area, and left temporal pole.

The duration of the words verbalized during VF correlated with the magnitude of the NrCBF increases in left Brodmann's area 6, and left inferior precentral region.

**Conclusion:** A network of regions, mainly in the left frontal lobe, was involved in both verbalized and silent VF. The changes in NrCBF across conditions suggests that: 1/ Control of verbalization engages the area 8, left putamen and cerebellum; 2/ The duration of verbalization correlates with Brodmann's area 6 and the left inferior precentral gyrus. Strikingly, the left inferior precentral gyrus and the right SMA appeared even more engaged in the silent representation of words than in execution of verbalization; 3/ Word retrieval during verbalized and silent VF engages particularly Broca's area and left Brodmann's area 46.

### IS ANHEDONIA AN INTRINSIC FACTOR?

F. Assouly-Besse<sup>1</sup>, S. Dollfus<sup>2</sup>, M. Petit<sup>3</sup>. <sup>1</sup>Service de Psychiatrie, CH René Dubos, 95300 Pontoise, France; <sup>2</sup>CHU Côte de Nacre, 14000 Caen, France; <sup>3</sup>CHS du Rouvray, 76300 Sotteville-Les-Rouen, France

In a previous work in schizophrenic patients, we showed that high anhedonia scores (that is inability to experience pleasure) were not correlated with depression and negative symptoms.

For this reason, although anhedonia can be found in non schizophrenic