

There was no psychotropic or anticholinergic comedication. All patients had normal EEGs before taking clozapine. 15 patients showed pathological changes (group 2) and 14 no changes (group 1). Discriminant analysis showed that EEG changes are dependent on plasma levels ($p=0.0009$, plasma levels in group 1 mean $81.6 \text{ ng/ml} \pm \text{SD } 64.6$, in group 2 $235.7 \text{ ng/ml} \pm 169.8$). Of the patients, 72.4% were correctly classified as having either pathological EEG changes or none by this analysis. Variables such as dose, age, sex, weight and duration of treatment were not statistically relevant.

It seems that clozapine plasma levels are an indicator for the degree of centrally evoked electrophysiological reactions.

VII.4

THE DIMENSIONAL COMPLEXITY OF THE EEG IN UNTREATED ACUTE SCHIZOPHRENICS, IN PERSONS IN REMISSION AFTER A FIRST SCHIZOPHRENIC EPISODE, AND IN CONTROLS

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We studied 15 first episode acute schizophrenics before any medication, 12 other medication-free individuals with complete clinical and social remission after a first schizophrenic episode, and 17 normal controls. The dimensional complexity (the correlation dimension) of the left temporal-parietal and parietal-occipital EEG recordings was estimated during 20 s in each of six recording conditions. The correlation dimension of the temporal-parietal EEG differed significantly between the groups (ANOVA $p < 0.005$), and was significantly higher in the acute schizophrenics than in the normal controls ($p < 0.004$) consistently across conditions, while the remitted schizophrenics showed intermediate values (80% of the acute cases and of the normal controls were classed correctly by the optimal criterium). There were no significant differences between groups in the parietal-occipital EEG. The correlation dimension of the temporal-parietal EEG when compared with that of the parietal-occipital EEG was lower ($p < 0.05$) in the normals and remitted schizophrenics, and was higher in the acute schizophrenics; this difference between acute schizophrenics and normal controls was significant at $p < 0.002$.

Thus, the measure of dimensional complexity (the non-integer, fractal correlation dimension) of the EEG in acute never-treated schizophrenics differed from normal values depending on the brain area; the two areas studied showed significantly different results.

VII.5

LONGITUDINAL STUDIES OF AERPS AND CLINICAL EVOLUTION OF THOUGHT DISORDERS AND POSITIVE/NEGATIVE SYMPTOMS IN SCHIZOPHRENIA

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Auditory event-related potentials (AERPs) were analysed in a cross-montage (Fz, Cz, P, C3, C4) in a binaural signal detection task at two speeds of stimulation (randomized inter-stimulus intervals of 250–750 ms and 500–1500 ms). The 21 subjects detected rare randomized targets ($p = 0.1$), in series of randomized standard tones. One group of 7 schizophrenics with major syndrome of formal thought disorders (+FTD) was selected according to RDC, and DSMIII criteria. They were compared to 7 schizophrenics without the FTD syndrome (–FTD) and to 7 controls matched for age, education, medication, hospitalization, and intelligence score. Ss were tested in a longitudinal follow-up design with retest after 5 years following identical experimental and counterbalancing method to the pre-test. Clinical evaluation was assessed according to Andreasen's checklist of positive and negative symptoms and to psychiatric rating of functional improvement.

Results indicate that +FTD group is characterized by more psychotic positive and negative signs, by general electrophysiological 'flatness', by deficient attentional modulations of frontal negativities, by pervasive attentional deficits of response-set type, all of which aggravate over time regardless of clinical evolution. –FTD group shows less severe psychotic symptomatology, ERP indices of intrusion, cognitive perseveration, distraction related to input dysfunction and hyperarousal, which may or may not diminish over time with clinical improvement.

VII.6

PSYCHOPHYSIOLOGICAL CHARACTERISTICS IN SCHIZOPHRENICS AND THE RISK FOR PSYCHOTIC EPISODES

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The question to what extent ANS activity characteristics in schizophrenics may determine the future course of their illness has become an area of interest in clinical psychophysiology in recent years. In the present, prospective study psychophysiological measures (electrodermal activity, heart rate, respiration,