ANTIPSYCHOTIC MEDICATION CHANGES THE EEG OF SCHIZOPHRENIC PATIENTS TOWARDS NORMAL.

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In a study of the efficacy and safety of remoxipride compared with haloperidol in schizophrenia (DSM 111 R criteria), EEG frequencies were mapped before and after six weeks of medication. To be reported here, EEG changes had to reach statistical significance of t-scores of 3 or more and had to be present in both eyes-closed and eyes-open recordings. Delta (0.5-3.5 Hz) did not change significantly. Theta (4.0-7.5 Hz) decreased in the left anterior temporal, right frontal and right parietal lobes. Alpha (8.0-11.5) decreased in the right anterior temporal, left posterior temporal and right occipital lobes. Beta1 (12.0-15.5 Hz), beta2 (16-19.5 Hz) and beta3 (20.0-23.5 Hz) all decreased in the left posterior temporal lobe. Beta2 and 3 also decreased in the occipital lobes. Morstyn et al (1983) reported that in schizophrenia: (1) slow activity was increased anteriorly; (2) fast activity was increased posteriorly and in the left anterior temporal lobe. A very similar pattern was found in our patients before treatment. Antipsychotic medication returned our patients' EEGs towards normal.

Reference; Morstyn et al (1983) Electro-encephalogr.Clin. Neurophysiol. 56:265-271.

EFFECT OF VASOPRESSIN ON CIRCADIAN HEART RATE, BODY TEMPERATURE, AND ACTIVITY.

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Male, vasopressin-containing, Long-Evans (LE) and vasopressin-deficient, Brattleboro (DI) rats were maintained in individual cages while telemetered heart rate (HR), core body temperature (BT) and activity level (AC) data were collected. The rats were exposed to a 12:12 light-dark cycle with room temperature maintained at 23±1°C. A 1h feeding period was initiated 1h after the beginning of the dark cycle and another 1h feeding period commenced 7h into the dark cycle. While patterns of circadian rhythms of HR, BT, and AC were similar between DI and LE rats, there were significant differences in all three variables. When compared to LE animals, DI animals had a significantly: 1) slower HR throughout the circadian cycle; 2) lower BT throughout most of the circadian cycle; and 3) higher AC levels at the onset of the dark cycle. Results show that vasopressin plays a modulatory role in circadian rhythms of HR, BT, and AC.

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EFFECT OF ANIONS ON [^{3}H]CGP 39653 BINDING TO NMDA RECEPTORS IN BRAIN.

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We previously demonstrated biphasic effects of salts on the binding of [^{3}H]CGP 39653, a ligand for NMDA recognition sites, in well-washed membranes from rat cerebral cortex. Low concentrations of the salts increased binding, and higher concentrations produced inhibition. The increase in binding was due to conversion of NMDA recognition sites from a low- to a high-affinity state by cations (Soc. Neurosci. Abstr. 19:1784). In the present study, we evaluated the effects of sodium salts of different anions on [^{3}H]CGP 39653 binding to NMDA recognition sites under conditions in which all binding sites were transformed from the low- to the high-affinity state. In well-washed rat cortical synaptic membranes, all anions studied inhibited [^{3}H]CGP 39653 binding with different potencies. The range of IC_{50} values was from 2 mM to 300 mM. The order of potencies was as follows: citrate > EDTA > phosphate > carbonate > iodinate > nitrate > bromide > chloride > acetate > fluoride. Of the anions tested, HEPES had the lowest potency (IC50 > 400 mM). These findings have implications for the design of *in vitro* binding assays. They also suggest that *in vivo* conditions are complicated by the presence of endogenous anions which can alter interactions of ligands with NMDA recognition sites.

MULTIPLE NEUROTRANSMITTER RECEPTOR ANALYSIS IN HUMAN BRAIN: IT'S SIGNIFICANCE IN NEURODEGENERATIVE DISEASES.

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I have developed a procedure to simultaneously examine the distribution of multiple neurotransmitter receptor binding sites, in ten different cortical regions of human brain: Normal, Schizophrenia(Sch), Alzheimer's disease(AD) and Multi Infarct Dementia (MID).

Aliquots of membrane suspension from each cortical region were simultaneously assayed, in the absence and presence of cold ligands, for the binding of radiolabeled nicotine, ketanserin and SCH 23390 to nicotine, serotonin 5HT2 and dopamine D1 receptors respectively. Review of Multiple Neurotransmitter Receptor Binding Analysis Data obtained in this study, revealed the following:

- **5HT2 receptor binding** in all ten cortical regions showed a significant **increase in Sch brains** and a remarkable **decrease in AD and MID brains.**
- **Nicotine receptor binding** undergoes significant **reduction in** all ten cortical regions from **AD and MID brains**, and in 9 out of 10 cortical regions in **Sch brains.**
- **D1 receptor binding** was **enhanced** in all ten cortical regions in **Sch brains.**

Findings from this investigation may have important implications in the prevention and treatment of Neurodegenerative diseases.