APOLIPOPROTEIN E4 IN LATE ONSET DEPRESSION

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An increased frequency of apolipoprotein E4 has been reported in both late-onset Alzheimer's disease and multi-infarct dementia. It has also been suggested that the Apo E4 allele may increase plasma cholesterol. Late-onset depression (LOD) is frequently associated with cerebrovascular changes as well as cognitive impairment. In this study, Apo E4 phenotyping was performed using isoelectric focussing in 23 patients with LOD and 8 with early onset depression. None had SDAT at time of evaluation. Nine LOD patients and none of EOD patients had E4/3 alleles ($p < 0.05$). Patients with E4/3 had later onset of depression than those with E3 ($p < 0.05$). These preliminary results suggest that the presence of the E4 allele may be linked to LOD and that the pathophysiology in LOD may be related to that in late-onset AD or MID. These findings will be discussed in relation to current knowledge of the role of Apo E alleles in cardiovascular and dementing disorders.

NEUROPSYCHOLOGICAL VULNERABILITY MARKERS OF SCHIZOPHRENIA.

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We evaluated 15 patients with schizophrenia (SZ), 16 of their non-schizophrenic siblings (SB), and 31 demographically-balanced normal controls (NC) with a comprehensive neuropsychological test battery. SZ were neuroleptic-naive or off-medication and were evaluated at intake and again when stabilized on neuroleptics. SZ and SB were impaired compared with NC, with SB performance intermediate between that of SZ and NC. The shape of the deficit profile was similar in SZ and SB: greatest deficits were seen in verbal memory, abstraction, attention and language functions in SZ, with a non-significant trend in the same direction for SB. Cognitive function in SZ was stable across changes in medication status and clinical state. These results support the hypothesis that impaired information processing aggregates in the family members of schizophrenics and may serve as an indicator of genetic vulnerability to the disorder.

Effects of Reserpine on Extracellular Caudate Dopamine and Hippocampus Norepinephrine Responses to Amphetamine and Cocaine: Mechanistic and Behavioral Considerations.

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Amphetamine (AMPH) appears to release dopamine (DA) from a newly synthesized cytoplasmic (nonvesicular) pool, independent of neurogenic activity. However, norepinephrine (NE) is presumed to be synthesized exclusively in vesicles and recent studies have shown AMPH-induced increases in extracellular NE to be partially dependent on impulse flow. In order to elucidate the contribution of vesicular catecholamines (CA) to the AMPH response, in vivo microdialysis in freely moving rats was used to examine the effects of reserpine (RES), which disrupts vesicular stores of CA, on the caudate DA and hippocampus NE responses to AMPH. These results were compared to the effects of cocaine (COC), which depend on vesicular stores of CA and impulse flow-mediated exocytosis. As anticipated, the NE responses to both AMPH (0.5, 1.25, and 5.0 mg/kg) and COC (20 mg/kg) were prevented by RES pretreatment (2.5 mg/kg, 24h). Also, whereas RES did not alter the DA response to the intermediate dose of AMPH, it decreased the DA responses to the low and high doses of AMPH by about 65% and 50%, respectively. Furthermore, although the DA response to COC was significantly decreased by RES, it was not completely prevented. In summary, the dopaminergic and noradrenergic responses to AMPH and COC exhibited both predicted and unanticipated dependence on vesicular stores of CA. Dissociations between biochemistry and behavior will be discussed.

SELECTIVE ATTENTION AND INTENTION IN SCHIZOPHRENIA

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Behavioral studies in humans have suggested that each hemisphere is important for mediating selective attention and response preparation (intention) in contralateral hemispace. In addition, there is evidence that the medial frontal lobe has a major role in response preparation. The aims of this study were to provide an experimental neuropsychological assessment of response preparation and selective attention in schizophrenia and to evaluate the hypotheses of medial frontal lobe dysfunction and/or hemispheric asymmetry in this disorder. Age and sex matched group of 21 chronic schizophrenic patients and 21 normal subjects were tested on a choice reaction time task in which they were given preliminary information about where a target stimulus would occur (selective attention) and which hand to use for responding (response preparation). Schizophrenic patients provided longer reaction times than normal controls ($F = 64.3$; $df = 1,40$; $p < 0.0001$), which effect was more prominent when the target stimuli was presented in the right hemispace ($F = 4.1$; $df = 1,40$; $p < 0.05$). All subjects, controls and patients, benefited from preparatory information regarding subsequent responses. The results of the attentional paradigm indicate, that the deficit of information processing in schizophrenia may affect left hemispheric mechanisms to a larger extent. According to the response preparation model, there was no evidence of medial frontal lobe impairment.