0.26-30 Hz). Checkerboard pattern reversal VEP was recorded from O1-Fz and O2-Fz leads (for details of methodology see Visser et al. Electroenceph. clin. Neurophysiol. 1985, 60:115).

Before treatment 3 patients had normal or almost normal EEGs, 5 patients showed mild abnormalities (suggesting minor vascular pathology) and 10 patients had severely deteriorated EEGs (slowing of background activity and insufficient reactivity). VEPs were normal only in 7 subjects; the remaining 11 showed delayed P165 and N220 latencies; in 4 of these also P100 was delayed. Results showed that in all three groups none of the variables changed significantly (Wilcoxon rank test).

61. Construction of lambda gt11 cDNA libraries from normal and Alzheimer's disease brains


The majority of the proteins which are specifically synthesized by the human brain remains unknown, while playing a keyrole in physiological and probably in pathological conditions. In particular, the biochemical origin of many degenerative disorders and of Alzheimer’s disease is not known. In order to identify brain proteins and the characterize them at the molecular level, cDNA libraries from post mortem human brains were constructed. If the brain suffering and the post mortem delay are not too long, RNA was able to produce high molecular weight proteins when translated in vitro. mRNA was transformed into cDNA in order to be cloned in the lambda gt11 vector. After in vitro packaging, libraries were obtained containing $10^6$ to $210^6$ plaques, 92 to 98% of them being recombinants. Normal human brain was first investigated and cDNA libraries were constructed from cerebral cortex, caudate nucleus, cerebellum and hippocampus. Other regions like hypothalamus and substantia nigra will also be studied. A lambda gt11 cDNA library from the cerebral cortex of an Alzheimer’s brain was also constructed. These libraries contain unknown but specific brain proteins. In order to try to identify these peptides, differential hybridization between brain cDNA and liver mRNA has been used. In particular, a caudate nucleus library containing cDNA enriched against human liver mRNA has been constructed. Differential hybridization will also be used between pathological cDNA and normal brain mRNA. This is the first step of the characterization of a small number of cDNA specifically expressed in brain areas which are affected in degenerative disorders leading to dementia.

62. Neuropsychiatric disturbances in the presenium: possible contributions to early diagnosis of dementia

F.R.J. Verhey, E.J. Reyersen van Buuren and J. Jolles (Maastricht, The Netherlands)

The nature of first symptoms of dementia is largely unknown. Memory complaints and memory deficits are frequently mentioned in this respect, but these form also part of normal aging. Depressive and neurotic features might also be early symptoms. This might even be the case in fairly “young” patients in their fifties, complaining of disabled memory, concentration and with professional problems. The present study explored the possibility that neuropsychological impairments suggesting abnormal aging might be found in a psychiatric outpatients population of 45 through 60 years old. Six patients (47-59 years) were examined (neurological, psychiatric and neuropsychological, behavioral neurology, psychometric and information processing tasks). These patients were at first sight much the same; all had complaints of memory and concentration, fatigue, loss of energy and normal interests, were unable to perform normal in their profession while they had once functioned well. All were dysthymic according to DSM III.

Extensive history taking revealed that risk factors for brain damage were present in 4. Neuropsychological deficits were objectifiable in 5 patients, profiles were remarkably different. Abnormalities varied from minor planning deficits to multiple deficits of memory, concentration, language, planning and speed of information processing. Neurological examination was normal in all. As the complaints of this type of patient are usually interpreted in terms of psychological or social models, these findings suggest that a neuropsychiatric / neuropsychological approach may be relevant to these patients. Extensive history taking revealed risk factors for brain damage that was unknown until that moment. Neuropsychological assessment turned out to be indeed more differentiating than clinical examination. Follow-up will take place to investigate whether these findings will turn out to be first symptoms of dementia or must be described to “normal aging”.

63. Contribution for neuropsychology to early diagnosis of demential syndromes and the implication for treatment and care

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Neuropsychologists traditionally addressed themselves to the assessment of brain damage or
organicity. However, this focus changes, e.g., on cognitive disabilities and abilities and on giving precise directions with respect to care and treatment programs. Neuropsychology as a behavioral science addresses itself to concrete behavioral description which is based upon thorough knowledge of brain behavior relations (i.e., neuropsychology as neuroscience) and does not confine itself to contributions to medical classification. This fairly new approach in neuropsychological diagnosis of dementia will be illustrated by 3 cases, aged 70-75 years (male). These outpatients had problems of memory, concentration and depressive symptoms. All 3 were diagnosed as mild dementia of unknown etiology, 2 probably of the Alzheimer type. The diagnosis was based upon a neuropsychiatric/neuropsychological investigation. The latter involved a combination of psychometric tests, behavioral neurology and information processing tasks. All 3 showed disturbances in behavioral planning and all had mild to moderate language disturbances and were bad in handling complex visual information. Simple perception or simple motor functions were not disturbed. In addition, memory perse was not disturbed in one patient (span, consolidation and retrieval). Some implications of these findings for the care of these patients will be discussed: 1) communication in short sentences with concrete words in order to overcome the deficits of short term memory and impressive language; 2) active help in the formulation of action plans in order to overcome the planning deficits; 3) creating a situation of minimal distracting events in order to help focusing on the relevant stimuli; 4) translation of the cognitive deficits in terms of coping mechanism and educating others in managing these.

64. The dopaminergic system’s responsiveness in dementia

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Neurohormonal indexes have been recently incorporated into behavioural models. The release of a number of neurotransmitters in the blood affects the activity of CNS neurotransmitting system. The hormonal response to pharmacological stimuli supply information on behaviour of hypothalamic neurons in humans. Sulpiride selectively inhibits D2 receptors for dopa; these appear to be less sensitive to aging than D1 receptors. Dopa inhibits tonic PRL secretion. SDAT shows a decrease activity of both the cholinergic and dopaminergic systems; moreover, CSF levels of HVA and 5HIAA have been reported significantly lowered in SDAT. Transport of tyrosine and tryptophan across the blood-brain barrier is related to serum amino-acid (AA) patterns. A change in AA pattern may influence CNS monoamine metabolism. Thus we examined the baseline serum PRL level, PRL levels following an injection of 200 g of sulpiride and AA patterns in 36 demented subjects and 15 controls. Serum PRL values were measured by radio-immunoassay with commercial kits; AA levels by Kontron Liquimat AA-analyser and HPLC technique. The basal value of PRL revealed no difference between the groups, whereas the values after stimulation showed that the secretion in demented subjects was significantly reduced and a more flattened curve might be drawn. A discriminant analysis enables choice of more significant points of the curves. The data relating to AA patterns pointed out that demented subjects had significantly higher serum concentration of valine, isoleucine and glutamic acid, but no differences were found in the levels of tryptophan and tyrosine. These observations may partly explain the observed changes in monoamine levels in SDAT.

65. Congophilic angiopathy and dementia

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The cause of amyloid formation within cerebral blood vessels is unknown, but it may be immunologic (Glenner, Ann. Clin. Lab. Sci. 1975, 5:257; New Engl. J. Med. 1980, 302:1333). From experiments with rabbits immunized with whole amyloid plaques cores it was concluded that neurofibrillary tangles, amyloid plaques cores and amyloid congophilic angiopathy are antigenically more closely related to each other than to neurofibrillary tangles (Masters et al., EMBO 1985, 4:2757). Two cases of atypical Alzheimer’s disease with non-familial, autopsy-proven cerebral amyloid angiopathy (not associated with systemic amyloidosis) and spinal fluid protein abnormalities are presented and the findings discussed. The question is raised: “Is there still a case to be made for a diagnosis ‘congophilic angiopathy’ as such?”

66. Significance of “infarcts” on magnetic resonance imaging (MRI) scans in demented subjects

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Although the MRI is more sensitive than the CT scan in detecting "infarcts", or “white dots”, the