

97. (A34) Motor programming

D. LINKE, *Bonn, Federal Republic of Germany*

Models of storage and organization of cerebral motor function have to take into account the degree in which feedback is used in performance. In a previous study (1976) it was shown, that such complicated activity as articulation can be performed without kinesthetic and auditive control.

Motor activity was now studied in a case of loss of feedback in different conditions. We found that in musical performance, as an example of highest motor activity, exact playing (piano and guitar) is possible without visual and auditive control in advanced players. This could be confirmed by auditive and electromyographic analysis. For studying the interrelation of visual and kinesthetic control we tested 10 normal right-handed adult subjects, 2 left-handed subjects, 6 children and 20 patients with different cerebral lesions, who had to construct geometrical figures with and without visual control with the right and left hands. Missing visual feedback caused the worst constructive disturbances in the subdominant hand in normals and much more in children than in adults. In the patient group the worst performance was seen in a case of traumatic lesion of the somatosensory cortex. The data support the view, that shifting of control channels is possible and that feedback loops can progressively be internalized to constitute a motor program.

98. (A34) The prognosis of patients with traumatic apallic syndrome

F. GERSTENBRAND, W. HENGL, J. RAINER, E. RUMPL and E. STRALKOWSKI, *Innsbruck, Austria*

One hundred patients with symptomatology of traumatic apallic syndrome were studied at different stages of recovery. The deficit of higher brain functions was correlated to other symptoms of cerebral lesions, such as focal, extrapyramidal and peripheral symptoms and other complications. The disturbance of higher and highest brain functions was less pronounced than in other neurological complications following apallic syndrome. Thirty percent of the patients were socially rehabilitated.

99. (A34) Registration of motor activity in postcomatose states

H.M. EMRICH, J.B. ALDENHOFF and D. v. CRAMON, *Munich, Federal Republic of Germany*

Integral motor activity of arms and legs is registered by use of a kinesiometer: the self-winding mechanism in a wrist watch, in which the balance is removed, serves as a receiver of positional changes. There is a preferential sensitivity of this monitoring system to positive and negative acceleration. A standardization of the measuring procedure is yielded on a bicycle-ergometer by recordings at different rotation-frequencies (40–75 cpm). This way registrations of different kinesiometers can be correlated to each other. The improvement process of motor activity in postcomatose patients and in patients with other motor disorders is by this system monitored separately in arms and legs, and the measurements are related to other variables, e.g. the therapeutic and clinical course.

100. (A34) Method for the semiquantitative evaluation of coma and its use in therapeutic evaluation

A. AGNOLI, N. PALESSE, S. RUGGIERI and V. BOCOLA, *L'Aquila, Italy*

The usual classifications of coma (both at 3 and at 7 different levels) are extremely difficult to use in prognostic evaluation. A special neurological, semeiological technique, according to Plum and Posner, not only allows us to localize the anatomo-functional level but also to follow its evolution and examine the disorder more closely, thus providing a more exact diagnosis. In an attempt to define the most important signs with a view to prognostic evaluation we used 4 parameters (respiration, pupil diameter and response to light, motor response to nociceptive stimuli, oculovestibular reflex) the extent of which is related to the anatomo-functional level of the lesion. Each of these main symptoms was given a rating which varied from a minimum (1) in a normal situation to a maximum (6) in an extremely severe situation. Since each of these 4 functions is differentiated by the structures at different brain levels (diencephalon, mesencephalon, pons and bulb) with the result that the lesion at each level produces characteristic clinical effects, we have defined precise syndromes. By evaluating the score for the 4 symptoms we can express

**Novel Biochemical, Pharmacological
and Clinical Aspects
of Cytidinediphosphocholine**

Proceedings of the International Meeting on Novel Biochemical,
Pharmacological and Clinical Aspects of Cytidinediphosphocholine
held in Sorrento, Italy, on June 12-14, 1984.

Editors:

Vincenzo Zappia
University of Naples
Naples, Italy

Bengt I. Nilsson
University Hospital
Lund, Sweden

Eugene P. Kennedy
Harvard Medical School
Boston, Massachusetts, U.S.A.

Patrizia Galletti
University of Naples
Naples, Italy

Excerpta Medica

The International
Medical Abstracting Service

Excerpta Medica
Amsterdam · Princeton
Oxford · Geneva
Tokyo · Melbourne

International
Congress Series

No. 427

11th World Congress of Neurology

Amsterdam, The Netherlands
September 11-16, 1977



Editors:
W. A. den Hartog Jager
G. W. Bruyn
A. P. J. Heijstee

Elsevier
New York · Amsterdam · Oxford

Abstracts