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FUNDAMENTAL AND CLINICAL STUDIES OF CYCLIC CYTIDINE 3, 5-MONOPHOSPHATE(cCMP) RADIOIMMUNOASSAY. Y.KAJITA,T.HACHIYA,M.YOSHIMURA,H.IJICHI,T.MIYAZAKI and Y.OCHI. Kyoto Prefectural University of Medicine and Shiga University of Medical Science. Kyoto and Otsu.

The study was performed by Yamasa's cCMP radioimmunoassay kit. The measurable range of kit was from 6.25 to 400 fmol/tube. The assay was highly specific for cCMP; CTP and cytidine being 100-1000 times less reactive with the antibody.

In the normal subjects, mean plasma cCMP levels were 0.97±0.18 pmol/ml(SD), that means about 1/14 of plasma cAMP levels and about 1/4 of plasma cGMP levels. Mean cCMP levels in red cell were 9.20±2.95 pmol/ml, that was about 1/14 of cAMP and about 1/3 of cGMP. Mean cCMP levels in whole blood were 6.47±0.68 pmol/ml.

In malignant groups, especially solid tumors, plasma cCMP levels were relatively high as compared with normal subjects, and urinary excretion of cCMP in acute leukemia patients increased.

Plasma cCMP levels of hyperthyroid, euthyroid and hypothyroid patients were within normal range despite of high levels of plasma cAMP in hyperthyroid patients.

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PROGNOSTICATING IMPLICATION OF CEREBROSPINAL FLUID CYCLIC AMP CONCENTRATION IN CEREBROVASCULAR ACCIDENT. Hiroshi Ishimitsu,Shinpei Namba and Susumu Nakasone. Department of Neurosurgery, Iwakuni National Hospital, Iwakuni.

(Method) It was investigated whether CSF or plasma cyclic adenosine 3'5' monophosphate (cAMP) concentrations after cerebrovascular accident (CVA) have any relation with consciousness disturbance. 94 patients with normal or disordered sensorium following CVA (17 : intracerebral hemorrhage, 41: cerebral infarction, 36 : subarachnoid hemorrhage) were investigated. Mainly lumbar and occasionally intraventricular CSF were taken and values of cAMP were determined by radioimmunoassay.

(Results and Conclusion) It was demonstrated that lower than normal concentrations of CSF cAMP were related with disordered sensorium in the late period after CVA. And it was mentioned both the low plasma TSH response to single TRH injection, and high lactate concentration in low cAMP value in CSF might suggest disordered metabolism of central nervous system in consciousness disturbance. In conclusion, it was speculated that correlation of CSF cAMP level with degree of consciousness disturbance might serve as a prognosticating factor in CVA.

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ASTROPROTEIN IN CEREBROSPINAL FLUID MEASURED BY RADIOIMMUNOASSAY. S.Tsuchimoto, A. Matsumoto, H.Kuyama, T.Eguchi, A.Nishimoto and A.Myoga. Dept. of Neurological Surgery, Okayama University Medical School,Dept. of Neurosurgery,National Cardio-Vascular Center and Dinabot Radioisotope Laboratory. Okayama, Osaka and Tokyo.

Astroprotein was detected in normal fibrillary astrocytes and astrocytoma cells. Astroprotein measured by radioimmunoassay has been reported to increase remarkably in both CSF and tumorous cystic fluid in patients with gliomas. It could be high in CSF under the condition of the damage of fibrillary astrocytes such as severe head injury.

To study correlation between astroprotein and severity of head injury, CSF astroprotein titer was measured following experimental brain injury in dogs. When the lesions were localized in the cortex, CSF astroprotein was detected less than 70 ng/ml for the first 5 hours following injury. In contrast, when the lesions extended to the white matter, astroprotein titer exceeded more than 300 ng/ml.

Therefore it was suggested that the amounts of astroprotein in CSF had some relationships with severity of brain damage, especially the lesions involved the white matter.

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USE OF DIGOXIN-RIA-STAT FOR THE EVALUATION OF DIGOXIN THERAPY. K.Shinozaki,K.Masuhara H.Nozaki,S.Arai,Y.Sasaki,K.Kashiwada,K.Hoshi K.Someya,A.Sato and T.Sakaki. St. Marianna University School of Medicine. Kawasaki.

Serum digoxin levels (SDL) measured by RIA have been known to be good indicatior for the evaluation of pharmacokinetics model. Based on the clinical pharmacokinetics theory, we have evaluated a method for predicting SDL in steady state by measuring one sample at transition state. The method prove to be accurate and practical means for the prediction of SDL at steady state, which allows assessment of digoxin therapy and change of the regimen, if necessary, before intoxication occurs.

For this purpose it is essential to know the SDL rapidly. Therefore, digoxin-RIA-stat (Phadebas stat-RIA; Pharmacia Lab.) was evaluated. Phadebas stat assay correlated well with Phadebas complete assay (Yc=0.96x(s)+0.01,r=0.96). The latter correlated well with SDL measured by Abbott RIA kit (Ya=1.02x(c)+0.21, r=0.96). Assessment of digoxin therapy using stat-RIA was confirmed by complete assay in 89% of 62 cases.

Combination of digoxin-RIA-stat and pharmacokinetics data analysis may prove useful for the prediction and revision of inadequate digoxin therapy.