FUNDAMENTAL AND CLINICAL STUDIES OF CYCLIC CYTIDINE 3, 5-MONOPHOSPHATE (cCMP) RADIOIMMUNOASSAY. T.KAJOITA, T.NAGIYA, M.YOSHIMURO, H.IJICHI, T.MATSUKAGI AND Y.OCHI. Kyoto Prefectural University of Medicine and Shiga University of Medical Science. Kyoto and Osaka.

The study was performed by Yamasa’s cCMP radioimmunoassay kit. The measurable range of kit was from 6.25 to 400 pmol/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 0.87±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 cCMP. 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.

ASTROPROTEIN IN CEREBROSPINAL FLUID MEASURED BY RADIOIMMUNOASSAY. S.Takahimoto, A. Matsumoto, H.Kyuma, T.Eguchi, A.Nishimoto and A.Myora. Dept. of Neurological Surgery, Okayama University Medical School, Dept. of Neurosurgery, National Cardio-Vascular Center and Dinabot Radiototope 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 amount of astroprotein in CSF had some relationships with severity of brain damage, especially the lesions involved the white matter.


Serum digoxin levels (SDL) measured by RIA have been known to be good indicator 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 (r=0.96(x)+0.01, r=0.96). The latter correlated well with SDL measured by Abbott RIA kit (Y=0.12x+0.21, r=0.96). Assessment of digoxin therapy using stat-RIA was confirmed by complete assay in 89% of 52 cases.

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