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 0.7±0.18 pmol/ml (SD), that means about 1/4 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.

(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 in patients with 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.

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 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 6 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.