Experimental Study of Surgical Procedure upon Plasminogen Activator and Inhibitor in Brain Tissue of Subcellular Units and in Blood

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Plasminogen activator and trypsin inhibitor were studied in dogs with experimentally produced brain edema. Plasminogen activator and trypsin inhibitor of subcellular units in dogs with experimentally produced brain edema were estimated, they were extracted by Astrup and estimated by Astrup fibrin plate method.

Result obtained were as follows.

1.) Increased plasminogen activator were observed in brain tissue of dogs with brain edema but trypsin inhibitor did not show any significant changes.

2.) Plasminogen activator of subcellular units in brain tissue were proved in all cases. Microsomal fraction in brain edema showed increased activator.

3.) Mitochondrial fraction in brain edema showed increased trypsin inhibitor.

4.) Plasminogen activator of hypothermia showed in microsomal fraction but its activator of rewarm showed increased in mitochondrial fraction.

5.) Trypsin inhibitor of rewarm showed increased.


7.) Trypsin inhibitor showed increased especially in cases of obtained A.M.C.H.A.

8.) In blood of dog, Fibrinolysis and Caseinolysis showed similar changing of venen and arterien.

9.) Total plasmin of venen inhibited in cases of obtained Mannitol.

Biochemical Studies on Cerebral Edema
—Changes of protein and electrolytes in different types of experimental cerebral edemas—

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In order to find the presence of some common phenomena in different types
of cerebral edema biochemical studies were made using twenty-two healthy cats weighing 3 Kg, which were divided into five groups; normal (5), triethyltin chloride-poisoning (5), epidural compression (3), non-focussed ultrasonic lesion (4) and cold injury (5).

Estimation of water content of gray and white matter revealed its increase almost exclusively in the white matter of every experimental group. Marked increase of sodium and chloride and moderate decrease of potassium were common to all edematous white matter, however, in gray matter slight decrease of sodium and chloride, and mild increase of potassium were observed. Changes of chloride level seemed well parallel with water content in white matter. Changes of protein profile were characteristic of each experimental group, except that decrease in total protein and increase in water-soluble protein of gray matter were group was at normal level for dry tissue weight, but it was decreased for wet common in all groups. Soluble protein of white matter of triethyltin poisoning tissue weight, probably because of water increases. Marked increase of soluble protein was observed in edematous white matter of ultrason and cold application groups. Also, increased albumin fraction of soluble protein of these white matter was clearly demonstrated by polyacrylamide gel electrophoresis and agar gel immunoelectrophoresis, and was identified as to be serum albumin by the double diffusion method of Ouchterlony.

58. The Influence of Nerve-Suture on the Recovery of Intrinsic Muscle Function after the Peripheral Nerve Section at Different Level

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In practical view point it is significant to know how the different level of peripheral nerve section makes an influence on the recovery of intrinsic muscle function.

60 rabbits were subjected to my study. The end to end anastomosis of right tibial nerve was made after nerve section at the upper, middle or lower level. Then I observed and recorded the evoked potential induced from interosseal muscles by means of the direct electrical stimulation through the ischias nerve, and follow up studies were made for 16 months.

The fibrillation potential was observed on the 4-6 postoperative days in each group.