RADIOLIGAND BINDING STUDIES OF RENAL DOPAMINERGIC RECEPTORS BY THE USE OF H-3-SIPERONE.

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In order to clarify the existence of dopaminergic receptors in renal plasma membrane and the effect of sodium load on these receptors, radioligand binding studies using H-3-siperonine were performed. Renal cortex and medulla dissected from rat kidneys perfused with 0.85 % NaCl were homogenized in 4 volumes of 200 mM sucrose, 30 mM d,1-histidine, 5 mM EDTA-2Na, 18 mM tris buffer, pH 7.4 with Potter-Elvehjem homogenizer. The homogenates were centrifuged at 10,000 g for 30 min, and then the supernatants were recentrifuged at 48,000 g. Homogenate was suspended with 50 mM tris buffer containing 10 mM MgCl2. Plasma membranes prepared in this way were incubated with H-3-siperonine at 37°C for 15 min. And binding reaction were separated with Whatman GF/C glass fiber filters. Maximal binding capacity (Bmax) of dopaminergic receptor was 540 ± 41 fmol/mg protein in cortex and 373 ± 30 fmol/mg protein in medulla, respectively. Dissociation constant (Kd) was 7.2 ± 0.4 nM in cortex and 8.2 ± 2.2 nM in medulla, respectively. Kd in both cortex and medulla increased after sodium load, but the increment of Bmax in cortex and medulla was not significant. Conclusion: Dopaminergic receptor exists in renal plasma membrane.

SCINTIGRAPHY OF PHEOCHROMOCYTOMA USING I-131 METAIBENZYLGUANIDINE (I-131 MIBG).

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The purpose of this study is to analyse the results of scintigraphy of I-131 MIBG which were carried out at various place. Total number of the patients, in whom scintigraphy of I-131 MIBG was performed up to Sept. 1984, was 143. Forty three out of 143 patient were diagnosed pheochromocytoma on the basis of increased catecholamine in serum and urine and abnormal mass on CT or histological finding of mass. The accumulation of I-131 MIBG by pheochromocytoma were observed in 40 out of 43 patients with pheochromocytoma. Five out of 143 patients were neuroblastoma and all of them showed the clear accumulation of I-131 MIBG by neuroblastoma on the scintigrams. Eight out of 143 patients were medullary carcinoma and 5 of them showed the clear accumulation of I-131 MIBG on the scintigrams.

These results indicates that the scintigraphy of I-131 MIBG is excellent imaging of pheochromocytoma as well as of neuroblastoma and medullary carcinoma.