Monoamine oxidase defect in essential arterial hypertension: 'a single dose pargyline test'

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Oral administration of a single dose of pargyline lowers the monoamine oxidase activity (MAO) of human platelets near to zero level within 24 h (using [^{14}C]-tyramine as substrate): the enzymic activity remains strongly depressed for 1-2 weeks in 15 normotensive voluntary subjects. The same dose of pargyline similarly reduces the platelets MAO activity in 15 patients with essential hypertension, but the rate of recovery is not significantly lower in these patients. The results obtained using [^{14}C]-benzylamine as substrate are similar.

The present results and the pargyline test are in agreement with previous observations of a defect in the MAO activity of liver and platelets in hypertensives (Buffoni, Dolara & Sicuteri, 1969; Sicuteri, Buffoni, Anselmi & Del Bianco, 1971) and furthermore demonstrate a clear defect in MAO activity of platelets in 25 hypertensives in respect to 25 normal subjects, using both substrates ([^{14}C]-tyramine and [^{14}C]-benzylamine).

A defect in the MAO of liver has been described also in spontaneously hypertensive rats (Ozaki, 1966).

References

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Secretion of calcium in the pancreatic juice: effect of secretin and caerulein

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The origin of the calcium secreted by the pancreas has been investigated *in vivo* in the guinea pig by a study carried out in parallel (a) in the juice secreted in response to the injection of either secretin or caerulein and (b) in the pancreatic tissue and in cell fractions isolated therefrom.

In agreement with previous findings we observed that the concentration of calcium is low in the secretin-stimulated and high in the caerulein-stimulated juice. In the latter calcium and protein are proportional (*ca.* 50 nmol/mg).

After i.v. injection of ^{45}Ca the radioactivity decreases rapidly and quasi-exponentially in the blood plasma. A roughly parallel time-course is found in the secretin-stimulated juice: the evolution of the juice : plasma radioactivity ratio resembles that observed with the extracellular space marker [^{3}H]-D-sorbitol. In contrast, the time-courses of ^{45}Ca in plasma and caerulein-stimulated juice are not proportional: the high levels characteristic of this juice are reached several minutes after the injection and maintained thereafter. This increase is followed about 50 min later by the appearance of the newly synthesized [^{3}H]-L-leucine-labelled proteins.

The pancreatic tissue is rich in calcium which is localized primarily in zymogen granules (ZG) (*ca.* 36 nmol/mg protein) and mitochondria; the soluble cytoplasm is low in calcium.

The injected ^{45}Ca accumulates in ZG faster than [^{3}H]-L-leucine-labelled proteins. The ^{45}Ca: protein ratio of these organelles is considerably lower than that of the caerulein-stimulated juice.

It is concluded (a) that calcium is secreted into the pancreatic juice in two fractions, one (possibly released by simple diffusion) associated with the electrolyte component, the other with the protein of the juice; (b) that ZG are the major, but not the only source of the latter fraction; and (c) that the ZG-associated calcium joins the exportable proteins some time after their synthesis, possibly in the Golgi complex and/or in the condensing vacuoles.