tryptophan infusion the concentration of HVA in CSF at both sampling sites rose markedly during the infusion period. The caudate nuclei of these dogs compared with their phenelzine pre-treated controls had lower dopamine concentrations and raised levels of the three metabolites.

The evidence for an interaction between the two metabolic pathways can be revealed by CSF analyses. Brain analyses can also demonstrate the interaction; however, it is then necessary to reduce the turnover of dopamine and, possibly, also compensatory feedback mechanisms.

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Acute hypothermic response of the rat to intraventricular injection of 6-hydroxydopamine

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Intraventricular injections of 6-hydroxydopamine (6-OHDA) cause a long-lasting depletion of both noradrenaline and dopamine from the brains of rats. The depletion is dose-dependent, the loss of noradrenaline being detectable at lower doses of 6-OHDA than those required to deplete dopamine (Uretsky & Iversen, 1970). These effects have been attributed to the degeneration of catecholamine-containing neurones in the brain.

In the present studies, the intraventricular injection of 6-OHDA into rats at room temperature was followed by a fall in body temperature of up to 4·5° C which lasted for 4 to 5 h. The degree of hypothermia increased with increasing dose in the range 5 to 250 μg 6-OHDA. Depletion of brain noradrenaline content to 20·7$\pm$6·2% (mean $\pm$ S.E.M., n=4) of the control and brain dopamine to 34·6$\pm$6·4% (n=4) of the control by pretreatment with two intraventricular doses of 250 μg 6-OHDA abolished the hypothermic response to a subsequent dose of 250 μg 6-OHDA. It appeared, therefore, that 6-OHDA was causing hypothermia by an interaction with catecholamine-containing neurones. In order to distinguish whether neurones containing noradrenaline or dopamine were necessary for the response, rats were pretreated with three intraventricular doses of 25 μg 6-OHDA. This procedure depleted noradrenaline to 25·0$\pm$2·9% (n=4) of the control while dopamine was unaffected at 89·5$\pm$9·1% (n=4) of the control. Rats pretreated in this way responded to a subsequent dose of 250 μg 6-OHDA with a hypothermia which was no smaller than that following the same dose of 6-OHDA in control rats. Thus, it appeared that neurones containing dopamine rather than noradrenaline were involved in the hypothermic response to 6-OHDA. This interpretation was further supported by the finding that protriptyline HCl (15 mg/kg intraperitoneally) did not reduce the hypothermic response to a dose of 150 μg 6-OHDA injected 120 min later. The simultaneous depletion of noradrenaline by 6-OHDA was significantly reduced by protriptyline under these conditions while the depletion of dopamine was not impaired (Evetts & Iversen, 1970).

We suggest, therefore, that 6-OHDA may release endogenous dopamine in an active form in the brain to cause the observed hypothermia.

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Comparative assays using gastric acid secretion: a simple application of non-linear curve fitting (T)

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Mechanism of extraction of angiotensin II in coronary and renal circulations (T)

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Conversion of angiotensin I to angiotensin II in isolated strips of arterial smooth muscle (T)

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Angiotensin effect on biosynthesis of noradrenaline (T)

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A method for measuring the effectiveness of drugs on platelet thrombus formation *in vivo* (T)

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