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The effect of adrenergic neurone blockade on responses of the cat heart to sympathetic nerve stimulation

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Stimulation of the right cardiac nerve, in the cat anaesthetized with chloralose, causes both positive inotropic and chronotropic effects on the myocardium, whereas during stimulation of the left cardiac nerve only an inotropic response is usually seen. This difference is analogous to that recently reported to occur in the dog (Furnival, Linden & Snow, 1968) and may be related to differences between the anatomical distributions of the two sympathetic postganglionic nerves within the heart.

TABLE 1. *Mean intravenous doses of bethanidine sulphate required for complete suppression, within one hour, of responses of the heart and nictitating membrane to indirect stimulation* (0·3–30 *Hz*)

Nerve	No. of expts.	Dose (mg/kg)	Range
Right cardiac nerve	4	0·5 } *	0·4–0·8
Left cardiac nerve	2	0·6 } *	0·4–0·8
Postganglionic superior cervical	4	3·2 *	

* Significance of difference between means $P<0·001$.

Preliminary results indicate that both nerves are blocked equally readily by bethanidine and confirm their relatively high sensitivity (Boura & Green, 1963). Table 1 summarizes findings which show that the mean intravenous threshold dose of bethanidine necessary to abolish cardiac responses to indirect stimulation was approximately one-sixth of that required to block contractions of the nictitating membrane elicited by postganglionic superior cervical nerve stimulation.

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