LETTERS TO THE EDITOR

Effect of Pyrogallol and Catechol on Isolated Smooth Organs

SIR,—Pyrogallol, when given intravenously to dogs, has a secondary excitatory effect on duodenal motility, apparently cholinergic in nature (Izquierdo and Izquierdo, 1961). This result led us to study the action of pyrogallol on isolated smooth organs of rabbits, guinea-pigs and rats. We also studied the effect of catechol, another inhibitor of catechol-*o*-methyltransferase, which according to Sjöstrand (1960) has excitatory effects on the guinea-pig ileum, due to an action on the muscle itself and on the intramuscular ganglion.

Our material and methods were the usual: a 3 ml. bath, thermo-regulated at 37 ± 0·5°, filled with Tyrode solution, and a frontal lever (1 : 10). Drugs used were pyrogallol (Merck), catechol (Poulenc Frères), adrenaline hydrochloride (Parke Davis), ascorbic acid (Roche).

In the first trials we dissolved pyrogallol in 1 per cent ascorbic acid. However, this solvent had an excitatory action on tonus and motility of its own. This led us to use solution of pyrogallol in Tyrode prepared just before adding it to the bath, so as to prevent oxidation.

TABLE I

Preparation	Pyrogallol		Catechol	
	Concentration mg.	Effect	Concentration mg.	Effect
Rabbit:				
duodenum	1	—	3	—
uterus	1	+0		+ tachyphylaxis
Guinea-pig:				
ileum	2	0 antihistaminic effect	1	+
uterus	0·5	+		
Rat:				
duodenum	0·2	—	0·4	—
uterus	0·1 to 0·03	—	0·08	—

— Relaxes. + Contracts. 0 No effect. +0 Eventually contracts.

According to the results expressed in Table I, both pyrogallol and catechol have a similar adrenaline-like action. Pyrogallol enhances the effect of adrenaline on the rabbit duodenum and antagonizes that of histamine on the guinea-pig ileum. These effects are in agreement with those observed on the *in situ* duodenum of dogs (Izquierdo and Izquierdo, 1961).

Though both polyphenols have little activity, the rat uterus appears to be the most sensitive organ to them. No excitatory "cholinergic-type" effect was seen on isolated smooth organs.

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