

## ACTION OF CHOLINE ON THE RAT BLOOD PRESSURE

The Chief difference between the action of acetylcholine and choline is considered to be quantitative (1). The present communication reports certain qualitative difference between the action of choline and acetylcholine on the rat blood pressure.

Healthy male mongrel rats were anaesthetised by an intraperitoneal injection of 6 ml/kg of 25% solution of urethane. Blood pressure was recorded with Statham force transducer and Grass polygraph model—4. Carotid artery was cannulated to record the blood pressure and jugular vein was cannulated for injecting the drugs.

8-32 mg/kg of choline given intravenously produced a sharp fall in blood pressure. The same dose caused a rise in blood pressure in rats pretreated with 1 mg/kg of atropine. Unlike the depressor response to acetylcholine (1—5  $\mu$ g/kg) that to choline was converted into a pressor response by hexamethonium (10 mg/kg) and hemicholinium (4 mg/kg) administration. The pressor action in hexamethonium treated rats was blocked by bretylium (10 mg/kg). Choline and acetylcholine were given 10-15 min after various blocking agents. 10 mg/kg of phenoxybenzamine given 30 min. before the injection of choline also blocked the pressor response to choline in hexamethonium treated rats.

The pressor action of choline is presumably due to liberation of catecholamines as it is blocked by phenoxybenzamine and bretylium. Abolition of depressor action of choline by hemicholinium which blocks choline transport across sites of acetylcholine synthesis (2) indicates that the depressor response to choline may be dependent on the synthesis of acetylcholine from choline in the body. Since hexamethonium lowered the basal blood pressure, choline may not have been able to lower it any further.

Prior reserpine treatment (2 mg/kg once daily for two days) failed to abolish the pressor response to choline in hexamethonium treated animals. It seems possible that choline liberates catecholamines from stores other than those affected by reserpine since choline produced the usual pressor response in the presence of hexamethonium in the reserpine pretreated rats in whom the stores of catecholamines were expected to have been depleted.

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## REFERENCES

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