5816

Effects of Acetylcholine Injections on Blood Fat and Glucose.

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Recent evidence shows that parasympathetic effects are mediated by acetyl choline.[1] Stimulation of the vagus (a parasympathetic nerve) results in a decrease of blood glucose,[2] presumably because of increased insulin production. Insulin itself produces a decrease in blood fat and glucose.[3] It is of interest, therefore, to determine the effect of injections of acetyl choline upon blood fat and glucose.

Four injections of 1 to 2 mg. acetyl choline per kilo of body weight, a half hour apart were made into the superior pancreato-duodenal artery of dogs under amytal anesthesia. Blood glucose determinations by the Hagedorn-Jensen method, and blood fat determinations by the Stewart and White method as modified by Himwich, Friedman and Spiers[4] were made upon blood samples drawn from the femoral artery.

TABLE I.

Effect of injections of acetyl choline into pancreato-duodenal artery upon blood fat and glucose—mg.%.

	Per injection	2 hr.	4 hr.	6 hr.
(1) glucose	102	65	60	70
fat	674	636	512	571
(2) glucose	104	104	89	87
fat	673	647	602	648
(3) glucose	95	87	77	78
fat	1022	727	682	758

Conclusion. Injections of acetyl choline into the pancreato-duodenal artery causes a decrease in blood fat and glucose.

[1] Dale, H. H., and Gaddum, J. H., *J. Physiol.*, 1930, **70**,, 109.

[2] Britton, S. W., *Am. J. Physiol.*, 1925, **74**, 291.

[3] Himwich, H. W., and Spiers, M. A., *Am. J. Physiol.*, 1931, **97**, 648.

[4] Himwich, H. E., Friedman, H., and Spiers, M. A., *Am. J. Physiol.*, 1931, in press.