8281 P

## Acetyl Choline and the Blood Sugar Level.

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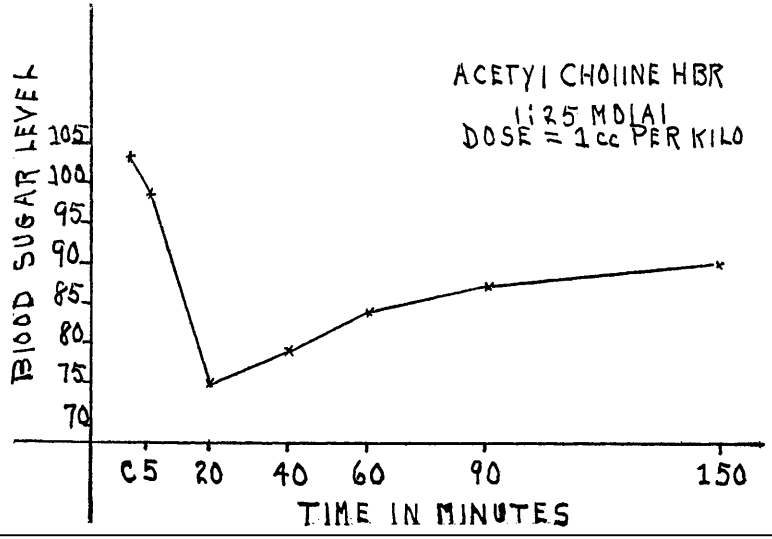
Hunt,[1] working with the blood pressure reducing principle of suprarenal and brain, ascribed the fall in blood pressure to acetyl choline. He stated that he was "inclined to think that it is due to an effect upon the terminations of the vagus in the heart." Dale[2] reported "it can now be definitely stated that the vagus impulses produce their effects by liberating acetyl choline among the fibers of the muscular wall of the heart." In another paper, the author[3] reports an attempt made to determine whether or not there might be a parasympathetic innervation to the Islets of Langerhans. From the results obtained it appears that if the parasympathetics be motor to the islets, pilocarpine, in this case, does not act by stimulation since this drug causes a rise in the blood sugar level. There is the possibility, however, that the parasympathetics are inhibitory. Since it has been quite satisfactorily demonstrated that this system acts by liberating acetyl choline, it was thought worth while to try the effects of this drug upon the blood sugar level.




1 Hunt, Reid, and Takeau, *Brit. Med. J.*, 1906, **11**, 1788.

2 Dale, H. H., *Science*, 1934, **80**, 1.

3 Hrubetz, M. C. In press.

Acetyl choline Hydrobromide was used in concentration of 1:25 molal. The dosage used was 1 cc. per kilo. All experiments were performed upon normal-fed rats. The 0.2 cc. Somogyi[4] modification of the Shaffer-Hartmann blood sugar method was used. Approximately 50 observations were made upon each point of the curve with the same number in the control series. As can be seen from the accompanying chart, there is a sharp fall in the blood sugar level, the greatest change occurring at the 20-minute interval. The blood sugar has not returned to the original level in 2½ hours.

From these results it appears that the vagus may carry motor impulses to the Islets of Langerhans—if this fall in blood sugar is produced by a liberation of insulin. However, there may be some other mechanism involved, such as the inhibition of glycogenolysis. At the present time, we are unable to explain the mechanism involved in this fall in the blood sugar level. Further work is being done on the subject.

## 8282 C

### Further Observations on the Poliocidal Property of Pregnant Mare Serum.*

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We have previously been interested in the changes that occur with pregnancy in man and animals with reference to the ability of the serum and of other biological substances to neutralize the virus of poliomyelitis *in vitro*.[1, 2] In an earlier paper[2] it was reported that the serum of 2 pregnant mares when combined in high dilutions with this virus was capable of bringing about its inactivation. No data were available at that time to indicate whether the normal serum of the same non-pregnant animal possessed similar properties. Again, since our work included tests on 2 animals only, it was unknown how regularly the same phenomenon could be elicited with the serum of other pregnant mares. The most important gap in the observed

4 Somogyi, M., *J. Biol. Chem.*, 1926, **70**, 599.

* Under a grant from the Rockefeller Foundation.

1 Jungeblut, C. W., and Engle, E. T., *J. Immunol.*, 1933, **24**, 267.

2 Jungeblut, C. W., Meyer, K., and Engle, E. T., *J. Immunol.*, 1934, **27**, 43.