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Quantitative changes in arterial blood sugar during canine anaphylactic shock.

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Following the observation that glycogen disappears almost quantitatively from the canine liver during the first fifteen minutes of typical anaphylactic shock,[1] we have determined the parallel quantitative changes in blood sugar. The determinations were made by the Meyers-Bailey modification of the Lewis-Benedict technique.

Blood from non-etherized normal dogs shows a sugar content varying from 0.10 percent to 0.12 percent. On etherization the blood sugar rises to 0.13 percent to 0.18 percent, an average of 0.15 percent in our series. The sugar remains fairly constant at this level, with maximum variations of 0.03 percent.

Two control non-sensitized dogs (morphine-ether anesthesia), and two dogs giving only slight suggestions of horse serum sensitization (by Kymograph readings) were injected intravenously with 1 cc. to 2 cc. horse serum per Kg. of body weight. The blood sugar remained almost constant in these animals for thirty minutes, with maximum variations of 0.02 percent above or below the initial readings.

Four dogs giving typical anaphylactic shock were injected with 1 cc. to 2 cc. of horse serum per kg. of body weight. In all four the blood sugar increased rapidly in amount, reaching a maximum of 0.25 percent to 0.27 percent in from ten to thirty minutes, an average increase of 0.10 percent above the initial readings.

These percentages are practically identical with the thirty minute blood sugar readings in normal dogs, after intravenous injection of glucose equivalent to the total estimated glycogen content of the liver.

[1] O'Neill, F. L., Manwaring, W. H., and Moy, H. B., PROC. SOC. EXP. BIOL. AND MED., 1924, xxii, 124.