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Blood Amylase Response to Acetyl-Beta-Methylcholine Chloride in Pancreatectomized Dogs.*

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(Introduced by George Baehr.)

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It has been shown that there is a conspicuous rise of blood amylase after the administration of acetyl-beta-methylcholine chloride.†[1] In order to determine the possible pancreatic origin of this increase, the experiments were repeated both before and after pancreatectomy. Determinations of the blood amylase in 5 dogs showed constant rises in the blood amylase titer after the intramuscular administration of the choline ester. The same dogs were then pancreatectomized under pernoston anesthesia and the extent of the blood amylase response to acetyl-beta-methylcholine chloride was again estimated. The viscosimetric method utilized for these determinations was identical with that reported in the original communication.[1] Determinations were made on the insulin-treated pancreatectomized animal in the fasting state, without the administration of insulin on the day of the experiment. A fasting specimen of blood, and one collected 4 hours after the intramuscular administration of acetyl-beta-methylcholine chloride was deemed sufficient for this investigation. Repeated post-pancreatectomy estimations revealed no blood amylase increase (Table I), the rise obtained in the unoperated animal being totally or almost totally abolished after removal of the pancreas.

In one dog, it was noted that the blood amylase could again be elicited about 4 weeks after pancreatectomy. We suspected, therefore, that remnants of the pancreas remained which later regenerated and hypertrophied. With this in mind, an exploratory laporatomy was performed, and 8.5 gm. of pancreatic tissue was found and removed. After this secondary operation, no amylase response to acetyl-beta-methylcholine chloride could be elicited after a period of 55 days. Table II.)

As additional controls, determinations were made on 4 dogs after

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† Mecholyl-Merck.

1 Antopol, W., Schifrin, A., and Tuchman, L., PROC. SOC. EXP. BIOL. AND MED., 1934, **32**, 383.

TABLE I.

Date	Fasting blood amylase units	Blood amylase units 4 hr. after injection of 10 mg. acetyl-beta-methylcholine chloride	% increase
		DOG 467.	
2/15/35	12	75	525
2/16/35		Pancreatectomy	
2/21/35	6	10	66
3/13/35	5	5	0
3/27/35	5	5	0
3/29/35	Died probably in acidosis. Post mortem showed no significant anatomical findings. No pancreatic tissue found.		
		DOG FRITZY	
12/28/34	33	75	127
12/29/34		Pancreatectomy	
1/2/35	21	21	0
1/9/35	11	13	13
1/10/35	Died. Post mortem showed severe broncho pneumonia. No pancreatic tissue found.		
		DOG 20.	
1/10/35	20	300	1400
1/14/35	25	270	940
1/17/35		Pancreatectomy	
1/21/35	12	12	0
1/21/35	Died. Post mortem showed severe broncho pneumonia. No pancreatic tissue found.		
		DOG 436.	
2/13/35	17	67	294
2/21/35	19	50	163
2/26/35		Pancreatectomy	
2/28/35	60	60	0
3/4/35	19	26	37
3/13/35	14	13	0
3/20/35	13	12	0
3/27/35	18	18	0
4/12/35	13	13	0
4/25/35	20	17	0
4/30/35	13	14	0
5/16/35	13	14	0
6/20/35	13	13	0
	Dog still alive		

pernoston anesthesia alone, and after abdominal operations. Although the blood amylase in some of these failed to show an appreciable rise after the procedure, the rise could again be elicited after a period of from one to 2 days.

Summary. The blood amylase response to acetyl-beta-methylcholine chloride cannot be elicited in dogs after total pancreatectomy.

TABLE II.

Date	Fasting blood amylase units	Blood amylase units 4 hr. after injection of 10 mg. acetyl-beta-methylcholine chloride	% increase
		DOG 16.	
11/28/34	18	75	317
11/29/34	21	85	310
12/1/34		Pancreatectomy	
12/4/34	34	35	3
12/8/34	15	18	20
12/17/34	13	17	22
12/18/34	11	13	18
12/28/34	37	43	16
1/2/35	15	40	166
1/9/35	13	30	131
1/22/35	15	31.5	110
2/19/35	17.5	37.5	115
3/8/35		Secondary Removal of Portion of Pancreas	
3/13/35	11	10	0
3/20/35	9	9	0
4/1/35	10	10	0
4/2/35	11	11	0
4/24/35	14	14	0
	Dog killed—no pancreatic tissue found.		

8284 C

An Attempt to Demonstrate Local Formation or Concentration of Virucidal Antibodies.*

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By the local injection of bacteria it is sometimes possible to show an antibody concentration at the site of inoculation greater than that in the serum. Cannon[1] found that the extracted juice of inoculated skin exceeded the antibody titre of the serum, as well as that of uninoculated skin. He suggests that local formation of antibody in the injected area is in part responsible for the effect. Seegal and Seegal[2] noted that there was a concentration of specific agglutinins in the fluid of the tissues surrounding the anterior chamber of the eye following local injection of typhoid vaccine. They, however,

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1 Cannon, P. R., and Sullivan, F. L., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 517.

2 Seegal, B. C., and Seegal, D., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 437.