

EFFECT OF PITRESSIN ON LACTIC ACID OF BLOOD, mg.%.

Preinjection	2 hrs.	4 hrs.	6 hrs.
13	33	27	13

hour when the lactic acid had returned to the preinjection level. One of the 3 dogs that were given pituitrin exhibited a similar rise in lactic acid. The other 2 animals as well as the 3 which were given pitocin, had variations in the concentration of lactic acid which were within the experimental error (± 2.5 mg. %). With amytal there were no significant changes in lactic acid after the administration of any of the posterior pituitary extracts. Our task is to make further studies of the character of the metabolism during the depression of the metabolic rate.

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Effect of Posterior Pituitary Extract on Plasma Concentration and Fat Content and on Blood Sugar.

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Raab¹ has demonstrated that injections of pituitrin diminish the concentration of plasma fat of unanesthetized animals. The present work is concerned not only with the effects of pituitrin, but also those of pitocin and pitressin on the concentration and fat content of plasma and blood sugar. Eighteen experiments were made on unanesthetized dogs and 21 were performed under amytal on dogs weighing from 6 to 24 kilos and in various nutritive conditions. The dosage of the chloretone-free extracts varied from 10 cc. to 30 cc.* Blood was drawn from the femoral artery, usually at 2 hourly intervals and analyzed for sugar by the method of Hagedorn-Jensen.² The fat content was determined according to the procedure of Stewart and White.³ Table I presents the changes in fats, plus and minus indicating changes of at least 40 mg. per cent. Table II contains the effects of the posterior pituitary extracts on the total

¹ Raab, W., *Z. f. d. ges. Exp. Med.*, 1926, **46**, 179.

* 1 cc. of pituitrin contains 10 oxytocic and 10 pressor units. 1 cc. of pitocin contains 10 oxytocic units and 1 cc. of pitressin contains 10 pressor units.

² Hagedorn, H. E., and Jensen, B. N., *Biochem. Z.*, 1923, **135**, 46.

³ Stewart, C. P., and White, A. C., *Biochem. J.*, 1925, **19**, 840.

solids of the plasma. The smallest difference is 3 mg. per cc. of plasma.

TABLE I. *Changes in Plasma Fat.*

		+	0	-	Remarks
Pituitrin	Unanesthetized	1	0	5	In 2 instances a rise preceded the fall.
"	Amytalized	2	0	3	
Pitocin	Unanesthetized	4	0	3	In 1 instance a rise preceded the fall.
"	Amytalized	2	1	5	
Pitressin	Unanesthetized	3	0	2	
"	Amytalized	2	0	6	
Control	Unanesthetized	0	1	0	
"	Amytalized	0	2	0	

TABLE II.
Total Solids of Plasma.

		+	0	-
Pituitrin	Unanesthetized	0	0	7
"	Amytalized	0	0	1
Pitocin	Unanesthetized	0	0	3
"	Amytalized	2	0	2
Pitressin	Unanesthetized	0	0	4
"	Amytalized	2	0	4

TABLE III.
Changes in Blood Sugar.

		+	0	-
Pituitrin	Unanesthetized	2	0	0
"	Amytalized	2	0	1
Pitocin	Unanesthetized	5	0	0
"	Amytalized	0	0	3
Pitressin	Unanesthetized	3	0	0
"	Amytalized	0	0	3

The effects of the extracts on blood glucose are presented in Table III. Changes of glucose are at least 5 mg. per cent.

The effects of pituitrin in diminishing the concentration of the plasma and its fat content as well as in raising blood sugar are also caused by pitocin and pitressin. These actions on the blood constituents are not so marked, or are actually changed, under amytal anesthesia.

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Effect of Ephedrine on Blood Glucose and Lactic Acid and Plasma Fat.

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The effects of subcutaneous injections of ephedrine on blood lactic acid and sugar plasma fat were studied in 10 dogs varying in weight from 4 to 18 kilos. The animals were in a post-absorptive condition and under the influence of amytal. The dosage of ephedrine sulphate (Eli Lilly and Company) in the different experiments