Pacific Coast Section.

University of California College of Medicine, December 11, 1929.

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Effect of Sodium Amytal on the Hyperglycemia Due to Morphine.

SELLING BRILL. (Introduced by C. D. Leake.)

From the Departments of Research Surgery and Surgery (Division B), University of Pennsylvania.

Sodium amytal (sodium isoamylethyl barbiturate) was introduced by Page[1] as an anesthetic without influence on blood sugar. He has been supported in this claim by competent observers[2] although Weiss and others[3] disagree with him. It has been stated by some physiologists that unless an animal was under sodium amytal anesthesia, blood sugar figures could not be accepted as being uninfluenced by the emotional state of the animal.

In this connection it is interesting to note the effect of amytal anesthesia on the hyperglycemia induced in dogs by morphine sulphate. In Table I are given blood sugar figures on 7 dogs. Two series of blood sugar determinations, several days apart, were made on each animal; first, following the injection of morphine sulphate alone and secondly, following morphine injection with the animal under amytal anesthesia. The dogs varied in weight from 7 to 18 kilograms. They were on a routine diet and were last fed 14 to 18 hours before the beginning of the experiment. The dose of morphine sulphate was 10 mgm. per kilo body weight given subcutaneously and the dose of sodium amytal was 50 mgm. per kilo in-

[1] Page, I. H., *J. Lab. and Clin. Med.*, 1923, ix, 194.

[2] Cori, C. F., PROC. SOC. EXP. BIOL. AND MED., 1925, xxiii, 127. Hepburn, J., *et al., Am. J. Physiol.*, 1924, lxix, 563. Edwards, D. S., and Page, I. H., *Am. J. Physiol.*, 1924, lxix, 177.

[3] Weiss, S., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiii, 363. Underhill, F. P., and Sprunt, D. H., PROC. SOC. EXP. BIOL. AND MED., 1927, xxv, 137.

traperitoneally. Blood samples were taken from a vein on the hind leg and sugar determinations were made by the method of Hagedorn.[4]

The results indicate that sodium amytal anesthesia in dogs has a marked inhibiting effect on the hyperglycemia due to morphine.

TABLE I.

Experiment.	Blood Sugar, mgm. per 100 cc.					
	During fasting	After 30 min.	After 1 hr.	After 1½ hrs.	After 2 hrs.	After 4 hrs.
I						
Morph. sulph. alone	94	162	212	212	202	147
Sodium amytal*+ morph. sulph.	95	116	107	98	105	
II						
Morph. sulph. alone	86	154	212	221	207	164
Sodium amytal*+ morph. sulph.	95	106	100	86	88	97
III						
Morph. sulph. alone	90	136	152	170	165	
Sodium amytal*+ morph. sulph.	99	147	150	129	128	
IV						
Morph. sulph. alone	88	174	244	234	250	
Sodium amytal*+ morph. sulph.	101	147	175	154	138	
V						
Morph. sulph. alone	83	165	216	200	169	164
Sodium amytal*+ morph. sulph.	80	124	73	103	97	87
VI						
Morph. sulph. alone	84	95	133	135	142	121
Sodium amytal*+ morph. sulph.	92	109	97	90	97	
VII						
Morph. sulph. alone	81	132	164	164	166	111
Sodium amytal*+ morph. sulph.	97	91	98	100	105	112
Average						
Morph. sulph. alone	86.6	145.4	190.4	191.0	186.0	
Sodium amytal*+ morph. sulph.	94.0	120.0	114.3	108.6	108.3	

* The sodium amytal injection preceded the morphine injection by about 20 minutes.

[4] Hagedorn, H. C., and Jensen, B. N., *Biochem. Z.*, 1923, cxxxv, 46.

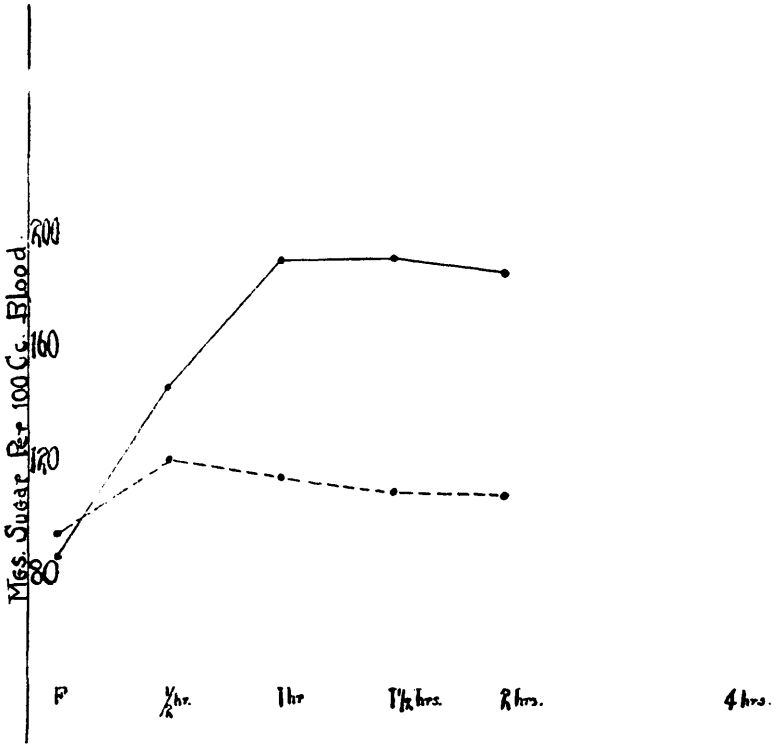

CHART I.

The unbroken line is the average composite curve of the blood sugar determinations on seven dogs following the injection of 10 mgm. morphine sulphate per kilo; the broken line, the composite curve on the same animals under amytal anesthesia and morphine.

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Toxicity of Acetarsone (Stovarsol) and its Calcium and Sodium Salts on Oral Administration to Rabbits and Cats.*

HAMILTON H. ANDERSON† AND CHAUNCEY D. LEAKE.

From the Pharmacological Laboratory of the University of California Medical School, San Francisco.

Acetarsone (acetyl-amino-hydroxy-phenyl arsonic acid) was synthesized in 1921 by Tréufouel and Fourneau[1] after having been pre-

* This report is based on part of an extended cooperative study of the chemotherapy of amebiasis conducted by the Department of Pharmacology of the University of California Medical School and the Pacific Institute of Tropical Medicine, San Francisco.

† Lilly Research Fellow.

[1] Fourneau, E., *Ann. Inst. Pasteur*, 1921, xxxv, 571.