10866

Colloidal Sulphur to Modify Extirpation Diabetes.

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There have been several reports in the literature stating that sulphur administration will increase sugar tolerance in the normal and the diabetic organism. Bürgi and Gordonoff[1] stated that the glycogen content of the livers of sulphur-fed rabbits was 2 to 3 times the normal level. According to Földes[2] the administration of sulphur to human diabetics caused in some cases, a fall in blood sugar, increased sugar tolerance, and elimination of glycosuria and ketonuria. Penetti[3] obtained a 15-20% lowering of the blood sugar in urethanized rabbits by subcutaneous injections of colloidal sulphur in doses of 30-40 mg per kilo. Daniel and Popescu-Buzeu[4] reported that sulphur-containing mineral water markedly lowered the blood sugar in dogs and in normal and diabetic humans. Koyasako[5] and Yoshikawa[6] found that the daily application of 15% sulphur salve to the skin of rabbits did not affect the blood sugar level, but did increase the sugar tolerance and likewise increased insulin hypoglycemia and attenuated adrenalin hyperglycemia.

On the other hand Foucin and Sandor[7] found daily injections of sulphur to be entirely without effect in diabetes and attributed any reduction in blood sugar which it caused as due to colloid shock; and Lewis and Lewis[8] observed no alteration in glycogen content of the livers of rats fed sulphur for several weeks.

Since none of the experiments cited above provided conclusive evidence, the problem was reinvestigated by us, using depancreatized dogs which had been standardized over many months as to diet, insulin dosage, and glucose output in the urine. To these dogs was administered a colloidal sulphur preparation of proven absorbability known to be non-toxic in ordinary doses.

The 3 dogs used were maintained on their standard diet throughout

1 Bürgi and Gordonoff, *Klin. Wchnschr.*, 1926, **5**, 466.
2 Földes, *Z. f. d. Gesamte Exp. Med.*, 1927, **55**, 615.
3 Penetti, *Z. f. d. Gesamte Exp. Med.*, 1927, **57**, 584.
4 Daniel and Popescu-Buzeu, *C. r. soc. biol.*, 1931, **106**, 106.
5 Koyasako, *Folia endocrinol. Japan*, 1931, **6**, 2.
6 Yoshikawa, *Sei.-i-Kwei Med. J.*, 1934, **53**, 74.
7 Foucin and Sandor, *C. r. soc. biol.*, 1926, **96**, 697.
8 Lewis and Lewis, *J. Biol. Chem.*, 1927, **74**, 515.

the 7-week period in which observations were made. They were fed and given the required dose of insulin daily at 9:00 a.m. and 5:00 p.m. The urine was collected under toluene and was measured and analyzed for glucose daily. Control analyses were performed for 7-day periods, alternating with 14-day periods in which 5 cc or 10 cc (250 or 500 mg) of colloidal sulphur was given daily by stomach tube.

Results. The average daily glucose outputs are shown in Table I.

TABLE I.

Dog No.	1st control period (7 days)	1st sulphur period (250 mg and 14 days)	2nd control period (7 days)	2nd sulphur period (500 mg and 14 days)	3rd control period (7 days)
I	2.76	0.87	1.22	2.64	1.47
II	5.44	2.76	3.82	3.27	1.63
III	10.52	8.31	12.13	10.81	5.21

It is evident from the above data that the administration of colloidal sulphur neither aggravated nor ameliorated the diabetic state of the animals; the glucose outputs were unchanged except for the variations ordinarily encountered. At no time was a sugar-free specimen obtained.

Conclusion. The administration of colloidal sulphur in daily doses of 250 or 500 mg has no effect on the diabetic state of the depancreatized dog.

10867

Tachyphylaxis to Renin.

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In the course of experiments on the preparation, purification, and assay of kidney extracts containing "renin", the phenomenon of tolerance or "tachyphylaxis" was noted. By this is meant the progressive decrease in response occurring as a result of the repeated intravenous injections of equal amounts of pressor material at equal intervals into an assay animal so prepared as to record blood pressure.

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