values of the specific gravity started in a low range not diagnostic of adequate renal function, and were elevated to diagnostic levels only when Pituitrin was added. It appears that without a period of water restriction, water diuresis was inhibited sufficiently by Pituitrin to give values considered indicative of adequate renal function. In all normal subjects studied, the results have been similar and in each instance specific gravity values were equal to or exceeded those obtained by the standard test with water restriction.

These results indicate that posterior pituitary extract in the doses used produced in individuals with normal renal function an inhibition of excretion of water sufficient to bring the specific gravity to or above the levels obtained with usual test periods of water restriction.

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Differentiation of Urogastrone and Pituitrin.*

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(Introduced by A. C. Ivy.)
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Urogastrone, a substance which inhibits gastric secretion and motility, has been obtained by a number of investigators from human urine.[1, 2, 3] The pressor principle of the posterior lobe of the pituitary, which also inhibits gastric secretion[4] and motility,[5] has likewise been obtained from human urine.[6, 7] Because of the similarities in the sources and properties of the two substances, it appeared desirable to investigate the possibility of their being iden-

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tical. Accordingly, a comparison has been made of the effects of urogastrone and pituitrin on gastric secretion, gastric motility, urine excretion, and blood pressure.

Methods. The effects on gastric secretion were measured by the double histamine injection technic,[3] using 6 dogs with pouches of the entire stomach. The effects on gastric motility were determined in 2 trained, unanesthetized dogs in which gastric motility was initiated and maintained by the introduction of approximately 80 cc of air into the recording balloon. The duration of inhibition, measured from the time when it appeared until the original tone and motility returned was taken as the indication of potency.[8] For the assay of anti-diuretic potency, diuresis was induced in a trained, unanesthetized dog with a bladder fistula by the administration of 250 cc of water by stomach tube. The ability of urogastrone and pituitrin to modify the resulting curve of diuresis was determined. For the assay of pressor or depressor effects dogs under ether anesthesia were used.

In all cases injections of the two principles were made intravenously. Pituitrin (Parke-Davis and Company) was used throughout. The urogastrone was a pyrogen-free product prepared by a method as yet unpublished.

Results. The results of the various assays are presented in the table and graph. It will be noted that as far as gastric secretory effects are concerned, 3 mg of urogastrone and 4 units of pituitrin exerted approximately equal degrees of inhibition. However, this

TABLE I.

Comparative Effects of Urogastrone and Pituitrin on Gastric Secretion and Motility and on Blood Pressure.

	Urogastrone				Pituitrin			
			Effect				Effect	
Assay	Dose, mg	No. assays	Degree	Kind	Dose, units	No. assays	Degree	Kind
Gastric Secretion	3	6	62%	Inhibition	.25	12	12%	Inhibition
	5	6	76 "	"	1.0	6	29 "	"
					2.0	6	37 "	"
					4.0	5	53 "	"
Gastric Motility	0.3	2	1.1 min	"	.001	2	None	"
	0.6	2	1.7 "	"	.05	4	1.7 min	"
	2	3	4.0 "	"	.1	4	2.9 "	"
	3	3	4.6 "	"	.25	2	13.8 "	"
	5	2	5.8 "	"	.5	2	18.2 "	"
Blood Pressure	3	2	None		4	4	3.2 cm	Rise
	6	2	"					
	15	1	1 cm	Fall				

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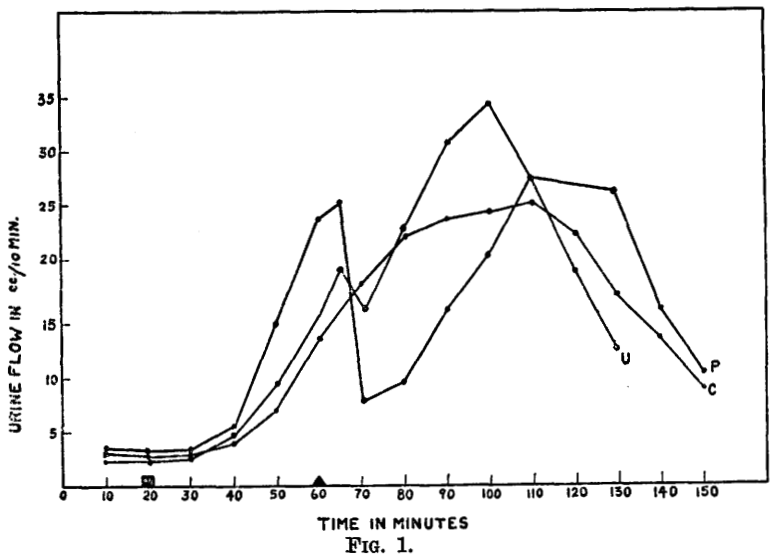

FIG. 1.

Antidiuretic effects of urogastrone and pituitrin. Water was given at ■ and drugs at ▲. Curve C is the average of 7 control experiments; curve U is the average of 5 urogastrone experiments (3 mg dose); curve P is the average of 3 pituitrin experiments (0.001 u. dose).

ratio holds for none of the other effects studied. It required only 0.1 unit of pituitrin to inhibit gastric motility as effectively as 1-2 mg of urogastrone. In regard to anti-diuretic action, 3 mg of urogastrone produced a barely detectable effect, whereas as little as 0.001 unit of pituitrin produced a striking effect. Finally, urogastrone has no effect on blood pressure unless very large doses are used, whereas 4 units of pituitrin produce an easily demonstrable pressor effect. There can be little doubt, therefore, that urogastrone and pituitrin are separate entities.

The effect of urogastrone on gastric motility is so mild as to render its significance questionable. The bearing of this finding on the hypothesis that urogastrone represents excreted enterogastrone requires further investigation.

Although pituitrin is a potent inhibitor of gastric secretion, the fact that enormous doses, in terms of antidiuretic effect, are required, argues against the possibility that the posterior lobe of the hypophysis exerts an important control over the gastric glands.

Conclusions. A comparison of the effects of urogastrone and pituitrin on gastric secretion, gastric motility, urine excretion, and blood pressure, indicates that the two principles are separate entities.