of the occurrence of more than one kind of hormone elaborated by the teratoma testis.

8189 P

Effects on Vascular-Renal System of Posterior Pituitary Extract Administered During Pregnancy.

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The parenteral or intranasal administration of extracts of the posterior lobe and pars intermedia of the pituitary body produces a decrease in the volume of the urine, an increase in the concentration of the urinary chloride, and a slight, if any, rise in the blood pressure.[1] The duration of these changes varies with the amount of the extract, but the magnitude of the response seems to bear no relation to the size of the dose.

Kamm and his coworkers[2, 3] have obtained two fractions from an extract of the posterior lobe of the pituitary gland—pitressin and pitocin. Pitressin contains the pressor and antidiuretic components, and its action is similar to the whole extract. Pitocin contains the oxytocic principle.

Shortly after the isolation of pitressin and pitocin, Ward, Lyon and Bemis[4] compared the action of these substances with pituitrin on pregnant women. They stated that pitressin and pituitrin produced an increase in the systolic blood pressure of 17 and 10 mm., respectively, which lasted for fifteen minutes. Pitocin caused an increase of only 5 mm., returning to normal in 5 minutes. Unfortunately, no attention was devoted to the water balance and the study of the blood pressure changes was inadequate.

Chipman,[5] Dieckmann, and undoubtedly other obstetricians have stated that the use of pituitrin to induce labor in pre-eclamptic patients has occasionally seemed to initiate the onset of convulsions. Convulsions and coma, of course, occur most frequently during

1 Stehle, R., *Am. J. Physiol.*, 1927, **79**, 289.

2 Kamm, O., Aldrich, T., Grote, I., Rowe, L., and Bugbee, E., *J. Am. Chem. Soc.*, 1928, **50**, 573.

3 Bugbee, E., and Simond, A., *Am. J. Physiol.*, 1928, **86**, 171.

4 Ward, G., Lyon, E., and Bemis, G., *Am. J. Obst. and Gynec.*, 1928, **16**, 655.

5 Chipman, cited by Ward *et al.*

labor, and the irritating effect of the uterine contractions may have produced the fits rather than the pressor and antidiuretic parts of pituitrin. An oliguria or anuria is one of the dominant signs of eclampsia and pre-eclampsia. We have noted that the oliguria is even more marked in severe and acute toxemic patients during labor and believe this disturbance in water balance might be the cause of the high incidence of intrapartum eclampsia.

Method of Study. Retention catheters were inserted into the bladders of pregnant, parturient and puerperal women, and the urine collected hourly. Water in amounts of 150 to 250 cc. was given each hour. After a satisfactory volume of urine had been obtained, one-half to two minims of pituitrin were injected subcutaneously in the pregnant patients, and intravenously in those in the puerperium. Illustrative data are given in Table I.

TABLE I.

Hourly Urine Output Before Pituitary Extract		Hourly Urine Output After Pituitary Extract				Rise in Systolic Blood Pressure
2	1	1	2	3	4	
		Normal Pregnancy				
165	120	30	30			12
219	210	110	70			16
204	300	50	26	39	304	20
125	190	75	55			20
54	65	10	10	10	0	17
		Toxemia of Pregnancy				
30	16	10	10	75		60
240	155	45	55			75
240	240	100	90			60
75	80	25	5	0	0	60
200	195	3	30	0	500	48
60	150	25	30	20	10	50
17	18	0	0	0	10	80

Ten normal pregnant and 21 toxemic patients have been studied to date. In the normal pregnant patients there is a very definite decrease in the volume of the urine and an increase in the chloride concentration, as is reported for non-pregnant individuals. In the toxemic patients, especially those diagnosed as pre-eclamptics, there is a very abrupt and marked increase in the systolic, as well as the diastolic, blood pressure, and a more marked decrease in the volume of urine. In one patient the oliguria was so marked that an acute pulmonary edema resulted. In another the pressor response was marked and may have been the cause of a partial premature separation of the placenta.

Summary. The volume of urine, providing the fluid intake is adequate, is not diminished during labor in normal pregnant women.

It is, however, decreased in pre-eclampsia or eclampsia, and the forcing of fluids may produce undesirable systemic symptoms and signs.

The parenteral injection of extracts of the posterior lobe of the pituitary gland produced the following changes: 1. A decrease in the volume of urine, an increase in the chloride concentration, and an average rise in the systolic blood pressure of 15 mm. Hg. in normal pregnant, parturient or puerperal women. 2. A markedly decreased volume of urine, an increase in the chloride concentration, and an average rise in the systolic blood pressure of 49 mm. Hg. in pre-eclamptic patients.

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Effect on Blood Pressure of Sudden Release of Intestinal Distention.

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A study has been made of the effect of changes in intestinal distention upon the blood pressure of a dog whose vagosympathetic trunks are divided and common carotid arteries ligated on both sides of the neck, and whose splanchnic nerves are divided. The blood pressure in such an animal would be expected to vary inversely with the degree of splanchnic congestion induced by the distention of the gut. The only factor difficult to control in such an animal is the contractility of the intestinal muscle, which in responding to a rise in intra-intestinal pressure may contract tightly, rendering the intestine anemic, and, by the consequent increase in peripheral resistance to the blood flow, causing a rise in blood pressure. This pressor effect obtained in 5 dogs in which the whole small intestine, ligated at both ends as a closed loop, was distended with air. In 5 dogs and 3 cats, however, the intestine remained passive under distention, and became distinctly cyanosed at an air pressure of 60-90 mm. of mercury, and the blood pressure of these animals exhibited at once a sharp fall of from 20-90 mm. of mercury within half a minute. Release of this intestinal distention after a period of from 5 minutes to 7 hours was followed by a return of the color of the

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