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Blood Pressure of Pregnant Rabbits and its Response to Pitressin.*

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Schockaert and Lambillon[1] have demonstrated that women in the latter half of a normal pregnancy are relatively insensitive to the pressor action of the postpituitary hormone, and that the blood serum of such women, when mixed with postpituitary hormone has an inhibitory action on the pressor component as compared to the serum of non-pregnant women. These findings have been applied to the study of human eclampsia.[2] This reports an attempt to determine whether such a phenomenon may be demonstrated in the rabbit.

We have found no reports of blood pressure records throughout pregnancy except for the human being, and it was necessary therefore to determine whether normal pregnancy in the rabbit produced any significant alteration of blood pressure. At various intervals throughout pregnancy, a standard dose of pitressin was administered intravenously to the unanesthetized animal to obtain the pressor response.

The method of Grant and Rothschild[3] was used for measuring the blood pressure on the central artery of the ear of warm, unanesthetized female rabbits weighing 3 to 4 kg. In one major respect our technic differed from theirs. Measurements were made at intervals of 10 to 15 seconds rather than 1 or 2 minutes. This offered a necessary advantage in enabling us to follow the rather rapid changes of blood pressure which follow the injection of pitressin. By actual tests it was found that the reactive hyperemia resulting from rapid determinations caused a lowering of the blood pressure only on the second reading and not thereafter. Readings were made until 5 consecutive values were found within 4 mm. The mean of these 5 readings was recorded as the resting blood pressure.

Pitressin was injected into the marginal vein of the ear opposite from the blood pressure capsule. A dose of 250 milliunits (0.25 ml

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1 Schockaert, J. A., and Lambillon, J., *Compt. rend. Soc. biol.*, 1936, **123**, 309.

2 Lambillon, J., *Revue Belge des Sciences Medicales*, Dixieme Annee N1, 1938, 1.

3 Grant, R. T., and Rothschild, P., *J. Physiol.*, 1934, **81**, 265.

of a solution containing 1 pressor unit of pitressin† to each milliliter) was selected because it was large enough to produce invariably a clear-cut pressor response without depressor effects. Immediately after injection, readings were made as fast as possible and the mean of the 3 highest readings was taken. The difference between this mean and the resting blood pressure was recorded as the pressor response. Tests with injections of saline, and with noises, pain, and other stimuli showed that the duration of the response with slowing of the heart from pitressin are adequate for differentiation between rises due to pituitary hormone and the immediate and transient rises of reflex origin.

A number of the animals were subjected during pregnancy to laparotomy and to surgical procedures on the aorta or various of its branches below the level of the renal arteries. In some cases, these operations resulted in death or premature delivery, but they did not consistently affect the blood pressure.

The observations are summarized in Table I. They show that the pregnant animals did not differ from the nonpregnant group with respect to their blood pressure or their response to pitressin.

Conclusions. As to the blood pressure, these findings are not unlike those reported for women.[4] The response to pitressin, on the other hand, is significant in that it is identical in pregnant and nonpregnant rabbits in contrast to the findings reported for women.

TABLE I.
Comparison of Blood Pressure and Pitressin Response in Pregnant and Non-Pregnant Rabbits.

	No.of observations	Mean	σ Distribution	No. of rabbits	Mean value
Non-pregnant blood pressure	102	87.6±1.23	12.47	17	84.8
Pregnant blood pressure	168	87.45±.99	12.77	16	86.1
Non-pregnant pitressin response	61	30.25±.77	6.01	14	27.1
Pregnant pitressin response	60	27.60±1.01	7.81	11	27.5

The first 3 columns are computed directly from all the observations made. The last column shows the means of the best available estimate of blood pressure for each rabbit in the group.

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[4] Jensen, J., *The Heart in Pregnancy*, St. Louis, C. V. Mosby Co., 1938, Chap. XII.