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Presence of Oxytocic Substances in Urine During Labor.*

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Since substances of great biological significance are excreted in the urine during pregnancy, it seems possible that other substances of different biological action might be excreted during active labor. Guerin-Valmale, Loriot, and Verdeuil[1] claimed that labor urine produced contractions of the human uterus *in vivo*. They were able to induce labor in 2 patients 10 days before term by administering labor urine by proctolysis; the patients were delivered about 12 hours after the instillation. Barjaktarovic[2] used the same method in 10 cases during different months of pregnancy and concluded that to induce labor in the second half of pregnancy amounts up to 4,000 gm. of labor urine were necessary. We have, therefore, attempted to extract oxytocic substances from labor urine.

Urine was collected from women during active labor and combined until a total volume of 10 or 12 liters was obtained. (Pituitrin was not given to any case.) Thirteen such collections were made, and each was worked up separately. The samples were acidified with acetic acid and concentrated *in vacuo* at a temperature of 30-40°C. The method then used to obtain the oxytocic substance was that described by Kamm and his co-workers[3] for isolation of the active principles of the posterior lobe of the pituitary gland.

The final product was a crude material of a gummy character and colored with urinary pigments, 10 liters of labor urine yielding an average of 0.5 gm. This dried material was taken up in distilled water and dialyzed over night in a refrigerator in a parchment bag. The solution from the bag was then made neutral to litmus with

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[1] Guerin-Valmale, Loriot, Verdeuil, *Bull. Soc. D'Obst. et Gyn.*, 1931, 619.

[2] Barjaktarovic, S. S., *Zbl. f. Gyn.*, 1933, **57**, 628.

[3] Kamm, O., Aldrich, T. B., Grote, I. W., Rowe, L. W., and Bugbee, E. P., *J. Am. Chem. Soc.*, 1928, **50**, 573.

sodium carbonate. The solution was tested, using about 0.4 cc. from a total volume of 25 cc. representing the original 0.5 gm., on human uterine muscle obtained from Caesarian sections at term. Twenty-five strips of muscle were used. The muscle was set up as described by Kurzrok and Lieb.[4] The result with the material from each of the 13 samples was a prompt and sustained contraction. When the solutions were tested on non-pregnant human uterine muscle (55 strips, obtained at various times of the menstrual cycle), there was no effect or a slight increase of tonus causing the normal contractions to occur with slightly more vigor. Control experiments were made, using material prepared by the same procedure from 2 10-liter samples of urine of male patients and 3 from non-pregnant women. These control materials, tested on parallel strips of muscle from the same pregnant (25) and non-pregnant (55) uteri as were used for the experimental materials, gave negative results, although a few gave slightly increased tonus.

The active material was tested by Dr. Mulinos, of the Department of Pharmacology, for its action on the water balance of the frog, and the result indicated that the substance has a pitocin-like action. The controls when tested in the same way had no significant effect.

The crude material is now being purified for clinical tests. Studies are in progress to determine how early in pregnancy these oxytocic substances appear and what effect they have on the uteri of early pregnancy.

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Prausnitz Küstner Reaction with Sera of Ragweed Hay Fever Patients to Ragweed Carbohydrate Fraction.

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In the course of a correlated series of laboratory and clinical investigations, which will later be reported upon in full detail, with carbohydrate obtained from ragweed pollen, certain results were obtained with the Prausnitz Küstner reaction (local passive transfer) which seem worth recording at this time.

In skin testing ragweed sensitive hay-fever patients to this carbo-

[4] Kurzrok, R., Lieb, C. C., PROC. SOC. EXP. BIOL. AND MED., 1930, **28**, 268.