

## 7417 C

## Gonad-Stimulating Hormone in Urine of a Patient with a Teratoma Testis.\*

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Zondek,<sup>1</sup> Ferguson,<sup>2</sup> and others have shown that the urine of men with various testicular tumors may contain a gonad-stimulating hormone. Evans *et al.*<sup>3</sup> reported that this substance may have characteristics of both the anterior-pituitary-sex hormone and the factor occurring in the urine of pregnant women. Hamburger<sup>4</sup> found a hormone in the urine of 5 men with testicular tumors and one woman with a teratoma of the ovary, which produced the same histologic picture in the ovaries of immature mice as that resulting from the injection of urine from pregnant women. In a seventh case, a man with an embryoma testis, he obtained results which he felt were due to the presence of 2 hormones. Since the patient had been castrated as a consequence of radium therapy, he believed that one of these substances was due to the presence of the tumor and that the other appeared as a post-castration effect.

The urine examined in this study was from a man 34 years of age, with metastases from a teratoma testis, for which he was under the care of Doctor J. R. Dillon, of the Department of Urology.

A 24-hour specimen of urine contained approximately 2500 rat units per litre. The histologic picture in the ovaries of more than 20 immature rats injected with the urine or with an extract, corresponded to that induced by the gonad-stimulating hormone of pregnancy (Fluhmann<sup>5</sup>) and showed corpora lutea, lutein cysts, and developing follicles. The injection of a known dosage of an extract to 5 immature rats resulted in an average increase in ovarian weight of 190% in 5 days, while the ovaries of 5 littermates given

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<sup>1</sup> Zondek, B., *Klin. Wchnschr.*, 1932, **11**, 274.

<sup>2</sup> Ferguson, R. S., *Am. J. Cancer*, 1933, **18**, 269.

<sup>3</sup> Evans, H. M., Simpson, M. E., Austin, P. R., and Ferguson, R. S., *Proc. Soc. Exp. Biol. and Med.*, 1933, **31**, 21.

<sup>4</sup> Hamburger, C., *Studies on Gonadotropic Hormones*, Levin and Munksgaard, Copenhagen, 1933.

<sup>5</sup> Fluhmann, C. F., *Endocrinology*, 1933, **17**, 550.

the same total dosage over a period of 10 days produced an average increase in ovarian weight of 460%.

Administration of the untreated urine to one hypophysectomized rat, and of an extract to 2 hypophysectomized rats for periods of 7 or 10 days resulted in a very great development of the theca and interstitial tissue. This result is characteristic of the "anterior-pituitary-like" hormone found in pregnant women (Noguchi,<sup>6</sup> Collip *et al.*,<sup>7</sup> Smith and Leonard.<sup>8</sup>)

*Conclusion.* It was found, on the basis of 3 biologic tests, that the gonad-stimulating hormone in the urine of a patient with a teratoma testis had the same characteristics as the substance occurring in the urine of pregnant women.

### 7418 C

#### Gonad-Stimulating Hormone in Urine of a Patient with a Chorioepithelioma Uteri.\*

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Although the discovery of Rössler,<sup>1</sup> that the urine of women with hydatidiform mole or chorioepithelioma uteri contains large amounts of a gonad-stimulating factor, has been repeatedly confirmed, there is as yet no information available as to the nature of this hormone.

The specimens examined in this study were from a patient under the care of Doctors Reginald Knight Smith and T. Henshaw Kelly. She was a woman of 29, who developed a chorioepithelioma uteri following a hydatidiform mole, and died with extensive metastases in the liver and in the lungs.

A number of extracts were prepared by alcohol precipitation of the urine, and various dosages were injected into more than 25 immature rats. The histologic examination of the ovaries of these

<sup>6</sup> Noguchi, K., *Jap. J. Med. Sc., Pharmacol.*, 1931, **5**, 104. Quoted by Collip *et al.*<sup>7</sup>

<sup>7</sup> Collip, J. B., Selye, H., and Thomson, D. L., *Nature*, 1933, **131**, 56.

<sup>8</sup> Smith, P. E., and Leonard, S. L., *PROC. SOC. EXP. BIOL. AND MED.*, 1933, **30**, 1248.

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<sup>1</sup> Rössler, H., *Z. f. Geburtsh. u. Gynäk.*, 1929, **96**, 516.