Urinary Excretion of Pregnanetriol in Various Diseases

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Urinary pregnanetriol was determined in normal subjects and in patients with various diseases by Bongiovanni's method.

Urinary excretion of pregnanetriol was low in childhood, markedly increased in puberty and slowly decreased in old age.

In the normal female, urinary pregnanetriol increased in the luteal phase and decreased in the follicular phase of the menstrual cycle. A similar change of urinary pregnanetriol excretion according to the menstrual cycle was observed even in a bilateral adrenalectomized female patient. Urinary pregnanetriol was increased following the administration of ACTH and SU-4885, and decreased following the administration of triparanol.

In patients with liver cirrhosis, hypothyroidism, pituitary dwarfism, posthypophysectomy and hypertension, urinary excretion of pregnanetriol was low in basal conditions and the usual increase following ACTH or SU-4885 administration was insufficient. In patients with hyperthyroidism, urinary excretion of pregnanetriol showed a normal value and its increase in response to SU-4885 was normal. In a patient with Cushing's syndrome, urinary pregnanetriol within normal range while an excessive rise in pregnanetriol to ACTH was observed. In adrenogenital syndrome with a defect in the 21-hydroxylase system, urinary pregnanetriol and 17-KS were abnormally high with a further increase following the administration of ACTH and SU-4885, and with a decrease to the fast normal range following the administration of β -methasene.

Urinary pregnanetriol excretion was usually parallel to urinary excretion of 17-OHCS, except that of adrenogenital syndrome in which defective steroidal 21-hydroxylation resulted in an excessive increase of urinary pregnanetriol excretion. In hypertension, low value of urinary pregnanetriol may be due to an altered metabolism of pregnanetriol precursor.

(pp. 1035~1047)