These findings indicate that the MCI measurement is beneficial to determine bone loss, and the bone loss with aging of women is caused by the decrease of ovarian function after the 40's and changes of other bone requlating hormones.

316. Blood Levels of Estradiol, FSH and LH in Woman with Climacteric Syndrome which Responds to Conjugated Estrogen Therapy

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To study the types of patients with climacteric syndrome who respond to conjugated estrogen therapy, we investigated the results of 1- to 2-month therapy in 52 patients by comparing their pre- and post-drug level of blood estradiol (E_2), FSH and LH as well as comparing information through a questionnatre on menopausal complaints listed according to Kupperman. Pre-drug E_2 in the patients studied was lower than normal, but the lowering was not significantly specific symptom of climacteric symptom. Blood FSH was higher in the patients complaing of hot flushing, sweating, depression, feeling of something sticking in the throat, and decreased sexual desire, whereas blood LH was higher in the patients with hot flushing and sweating. Changes in various symptom were investigated in relation to hormonal changes found after conjugated estrogen therapy. In the patients whose E_2 was increased and FSH and LH were decreased after the therapy, hot flushing, cold sensation, excitability and insomnia were ameliorated at a high rate. Numbness was favorably treated in the patients responding with increased E_2, whereas shoulder stiffness, fatigability and headache was reduced in those responding with decreased LH.

317. Endometrial Hyperplastic Lesion Caused by Long Term Estrogen Administration

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Material and Methods:

Ninety-three postmenopausal women, who took conjugated estrogen orally for 3-10 years, were analysed in regard to the endometrial hyperstimulation and other adverse effects. The dosage was 0.625 mg of conjugated estrogen daily for 21 days per one course. An interval of 7 days were placed between courses. Some women used 10 mg of norethisterone daily for 7 days following each estrogen course. An endometrial smear test and a curettage was done every twelve months for detecting the endometrial lesion.

Results:

One adenocarcinoma-in-situ, 1 atypical hyperplasia, 16 adenomatous hyperplasias and 3 cystic hyperplasias were detected. No significant difference was observed between norethisterone use and non-use. These women ceased to take estrogen immediately and in 2-5 months all of them returned to normal. The case of adenocarcinoma-in-situ has not relapsed for 5 years after the cessation of estrogen intake. Histological and cytological findings were generally in good correlation. Other adverse effects included enlargement of the uterus, benign breast tumors, breast pain, and slight elevation of s-Gpt value and they soon disappeared after interrupting the medication. Considering that a lower level of estrogen is enough for the replacement therapy of postmenopausal women than the physiological level in young women, the danger of long term estrogen administration must be overcome by an improvement of the medication plan.

318. Analysis of Luteal Insufficiency in Infertile Women

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Secretory patterns of serum Progesterone (P), Estradiol (E_2) and Prolactin (PRL) throughout the menstrual period were studied in infertile women in relation to the morphological findings of nidatory endometrium.

Methods: 110 infertile women were investigated on a basis of daily plasma sampling during mid-follicular phase to late luteal phase. Plasma concentrations of luteinizing hormone (LH), follicle stimulating hormon (FSH), P, E_2 and PRL were determined by radioimmunoassay. Endometrium were biopsied in mid luteal phase of same cycle.

Results: We defined that normal luteal function represents normal secretory pattern of P and duration of luteal phase. 83 cases out of 110 cases showed normal luteal function. 27 cases of 110 cases had various kinds of luteal insufficiency as follow. Type Ia (low P peak with short luteal phase) was 4 cases. Type Ib (normal P peak with early decline of P level) was 8 cases. Type II (low P peak with normal duration of

luteal phase) was 4 cases. Type III (normal secretory pattern of P in luteal phase and early onset of following menstruation) was 11 cases.

319. Clinical Effects of Partially Purified Human Menopausal Gonadotropin in Ovulation Induction

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The clinical effects of partially purified human menopausal gonadotropin (pp-HMG) were studied. Pergonal was purified by DEAE Sepharose CL-6B ion exchange column chromatography with gradient of ammonium bicarbonate. Fractions having high FSH and relatively low LH activities which were determined by radioimmunoassay were collected, sterilized, and repacked in ampules. This pp-HMG contained 51 IU of FSH activity which was determined by bioassay, and 26.8 IU of LH activity which was estimated from the result of radioimmunoassay per ampule. The FSH by LH ratio (F/L ratio) was 1.9, higher than that of original pergonal.

Ovulation induction therapy was performed by Pergonal and subsequently by pp-HMG in the same patients group. The pp-HMG showed less hyperstimulating activity to the ovary than Pergonal during ovulation induction therapy. So we expect that multiple pregnancies will be able to be prevented by using pp-HMG instead of commercially available HMG in ovulation induction.

320. Monitoring of HMG-HCG Therapy

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In order to establish a statisfactory monitoring method of HMG-HCG therapy, we analysed 24 cases (28 cycles) of sterility patients under HMG-HCG administration. Simultaneous determination of serum sex steroids (estradiol, estrone, teststerone, 17α-hydroxyprogesterone, 20α-hydroxyprogesterone, progesterone) was carried out by our high speed analysing system using high pressure liquid chromatograph combined with electrochemical detector and ultraviolet detector, and size of ovaries and follicules were measured by ultrasonagraphy. All these cases were regulated to be administered HCG when the serum concentration of estradiol reached upward to 800 pg/ml.

4 of all cycles (14.3%) were concieved (single 3, twin 1). In pre-HCG administration period the serum estradiol was found correlate (r=0.63) the number of follicules over 10 mm longitudinal diameter. 2 cases (these were concieved) were admitted, complicated with OHSS. Estrogens and gestagens were elevated in these cases at 11th day after switching in comparison with control group.

The result was suggested that the timing of HCG administration should be better to be determined from two points of view, estradiol concentration and ultrasonographic findings, these will be also useful for prediction to cenception and OHSS.

321. Induction of Single Ovulation with Intermittent Administration of Gn-RH in Women

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Induction of ovulation with intermittent administration was performed in 29 patients with anovulation. They were divided into 4 groups; anovulatory cycle, oligomenorrhea, secondary amenorrhea 1st grade and secondary amenorrhea 2nd grade, which included 3, 7, 12 and 7 cases, respectively. Gn-RH (2.5 or 5 μg, every 2 h, i.v.) was administered from 7:00-23:00 h by the use of self-controlled infuser. Follicular growth and subsequent ovulation were confirmed with ultrasonic scanning in addition to hormonal analysis in peripheral blood.

Success rates of ovulation are summarized as follows: 33.3%, 1/3 cases with anovulatory cycles; 85.7%, 6/7 cases with oligomenorrhea; 83.3%, 10/12 cases with secondary amenorrhea 1st grade and 85.7%, 6/7 cases with secondary amenorrhea 2nd grade. Total ovulation rate was 79.3%, 23 out of 29 patients. Based on our experience, successful ovulation followed by an adequate luteal phase appeared to be enhanced by giving HCG (8000 u, i.m.) on the last day of Gn-RH treatment. A short-term administration of HMG was effective in some patients who could not reached full maturation of the follicle during