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## JOURNAL ARTICLE

# Pituitary-testicular function of prostatic cancer patients during treatment with a gonadotropin-releasing hormone agonist analog. I. Circulating hormone levels

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Eight patients with advanced prostatic carcinoma (ages 59 to 78 years) were treated with a potent gonadotropin-releasing hormone (GnRH) agonist analog (buserelin, Hoechst; 600 micrograms intranasally, 3 times daily) and orchiectomized after 6 months of treatment. Endocrine responses were followed by serum hormone measurements during agonist treatment and for 3 months after orchiectomy. Six other patients (65 to 86 years) with advanced prostatic cancer had been orchiectomized as the first therapeutic measure and their blood samples were used as controls. In the GnRH agonist-treated patients, serum immunoreactive luteinizing hormone (LH) and follicle stimulating hormone (FSH) decreased after initial stimulation by 70 to 80%, within 1 to 3 weeks (P less than 0.01). FSH partly recovered (P less than 0.05) after the first month of treatment. Serum prolactin (PRL) displayed a slight tendency to decline during buserelin treatment (P less than 0.05). Serum total and free testosterone (T) of the buserelin-treated patients decreased to the castrate range within 3 to 4 weeks after an initial 5-day increase (P less than 0.01). Serum progesterone and 17-hydroxyprogesterone (17-OHP-4) decreased to the castrate range (by 50 to 70%) in 1 week. Only minor changes were observed in sex hormone binding globulin (SHBG). Significant, acute elevations of LH, FSH, T, and 17-OHP-4 were observed only on day 1 after an injection of buserelin (500 microgram i.m.) and not when assessed between day 7 and month 6 of treatment. After 6 months of buserelin treatment, orchiectomy did not affect the serum steroids measured. After orchiectomy, immediate increases in serum LH, and somewhat later in FSH, were seen in the control patients. (ABSTRACT TRUNCATED AT 250 WORDS)

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