

Use of gonadotropins in infertile patients



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A new era in the history of gonadotropins.

Today, gonadotropins are taken for granted as a routine treatment for infertile patients. However, developing safe and effective gonadotropin therapy for clinical use has required major advances in research on the reproductive processes of animals and humans over the past half century.

In fact, until the 1950s, gonadotropic hormones administered in infertile women were derived from the pituitary glands of animals, which reduced the effectiveness of the treatment due to antibody reactions (1).

This problem was solved by introducing gonadotropic preparations from human sources (human menopausal gonadotropin [HMG]; human pituitary gonadotropin [HPG]) to stimulate follicular growth. Gonadotropins in combination with human chorionic gonadotropin (HCG) were also found to induce ovulation in patients with amenorrhea, as Gemzell (2) first published in 1958. Since then, these preparations have been successfully used, although not without side effects such as the formation of lutein cysts and the occurrence of multiple pregnancies, largely due to the overstimulation of the ovaries.

The September/October 1967 *Fertility and Sterility* issue published two studies on the clinical results achieved with these preparations. The first one reported 17 pregnancies after combined HMG-HCG treatment in 25 women affected by primary or secondary amenorrhea (3). The authors described how they achieved a low rate of complications by continuously following the ovarian response to the treatment, evaluating estrogen excretion, vaginal epithelium growth,

and changes in the vaginal smear and in the volume of the cervical mucus. They also postulated, in agreement with Gemzell (2), that to achieve a sufficient degree of follicular maturation, a 24–48-hour interval between the HMG and the HCG treatment was needed.

In the same issue, Lunenfeld et al. (4) presented a study on the use of gonadotropins in infertile males. The authors described the effects of HMG on testicular function in 103 azoospermic or oligozoospermic patients, which resulted in activated spermatogenesis in patients with insufficient pituitary gonadotropins due to lack of production and/or release.

The use of gonadotropin treatment for ovarian stimulation has come a long way since the era of animal pituitary source. Advances in research and technology have also led to recombinant preparations, which have made possible different individually adjusted treatment regimes, highlighting a new era of infertility therapy.

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