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Effect of two differently glycosylated FSH on oocyte quality and clinical outcome.

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Gonadotropin isoforms influence a variety of biological activities, cellular growth and development, steroidogenesis and protein synthesis. Clearly, there is evidenced difference between hFSH and rFSH glycosylation pattern, which may affect the oocyte quality and clinical outcome in stimulated patients. Furthermore, several studies have documented the occurrence of significant changes in FSH heterogeneity during certain physiological conditions including puberty and the menstrual cycle. Acidic FSH isoforms are produced during late luteal and early follicular phases when the E2 level is low whereas less acidic FSH oforms are produced during mid-cycle when the E2 level is high. This shift owards the production and secretion of less acidic/sialylated FSH molecules in the mid-cycle and preovulatory phases of the cycle may be an important mechanism to regulate the intensity of the FSH stimulus during the final steps of follicular maturation.

In view of these concerns we performed three different prospective randomized studies to evaluate the efficacy and efficiency of hFSH (acidic) compared to rFSH (less acidic) in terms of oocyte quality and clinical outcome. The results obtained are highly in favour of hFSH in terms of oocyte maturity, embryo quality, pregnancies and implantation rates.