

Introduction

Since more than 20 years, IVF and for nearly 10 years ICSI together with different stimulation protocols have been performed for the treatment of many sterility cases. The clomiphene citrate (CC), the gonadotropins (human menopausal gonadotropin, HMG, recombinant follicle stimulating hormone, rFHS) or both substances in combination have been used in controlled ovarian hyperstimulation (COH) with the disadvantage of an unpredictable ovarian reaction and the occurrence of a premature luteinizing hormone (LH) surge in nearly 20% of cases. With the use of gonadotropin-releasing hormone agonist (GnRHa) in COH protocols, the results of the Assisted Reproductive Technique (ART) improved in terms of a reduction in cycle cancellation by the almost abolition of spontaneous LH surges to <2%. Furthermore, the GnRHa reduces inadequate follicular development and improves clinical pregnancy rate (PR). GnRH agonist action is characterized by an initial stimulation of pituitary LH and FSH release (flare-up effect) and by a down-regulation phase until the desensitization occurs. Various protocols have been designed for the clinical use of GnRHa during COH. The ultra-short, short, long and ultralong protocols have been tested. The so-called long protocol has become the most frequently used method in most major centers because it has proved to be the most effective protocol in terms of clinical efficacy (**Loumaye , 1990**).

On the other hand, the GnRHa long protocol has the disadvantages of the flare-up effect which is only observed when the agonist is utilized. This property of agonist implies that therapy must be initiated in the mid- luteal phase to wait until the flare up effect subsides and down regulation is achieved before beginning stimulation (**Devroy, 2000**).

More recently, as an alternative to GnRH agonists, GnRH antagonists (GnRHant) have been proposed to prevent the premature LH surge during IVF cycles (**Messinis et al., 2005**). The use of GnRH ant for ovarian stimulation protocols has shown very interesting perspectives (**Albano et al., 2000**). The antagonist binds competitively to the GnRH receptors, preventing the stimulatory effects of the LH-releasing hormone (LHRH) on the pituitary cells (**Reissman et al., 1995**). Its administration in both spontaneous or stimulated cycles leads to a rapid decrease of gonadotropins secretion and thereby, the duration of the treatment can be reduced as well as the number of ampoules of gonadotropins, with costs reduction, “avoiding” thus, the disadvantages of the GnRH_a, (**Leroy et al., 1994**).

It has been suggested that cycle scheduling is more difficult for GnRHant, as initiation of stimulation is dependent on the occurrence of menstruation. However, cycle scheduling is still feasible with GnRHant by pretreatment with the oral contraceptive pills (OCP) (**Koliobianakis et al., 2006 ; Rombauts et al., 2006**).

In an attempt to optimize the existing GnRH ant stimulation protocols, several studies have explored various aspects of the use in IVF. Such studies involved the optimal day of GnRHant administration (**Mochtar et al., 2004**), the effect of starting dose of exogenous follicle-stimulating hormone (FSH) on pregnancy rate (**Out et al., 2004**), the need to supplement the follicular phase with LH (**Griesinger et al., 2005**) and the need to increase the gonadotropin dose at GnRHant initiation (**Aboulghar et al., 2004**).

AIM OF THE WORK

To compare a multiple dose GnRHant protocol in induction of ovulation for ICSI Patients with a standard GnRHa long protocol using a matched pair analysis of unselected patients.