Introduction

Polycystic ovary syndrome (PCOS) is one of the most common causes of anovulatory infertility and affects 5 - 10% of women of reproductive age. Women with this syndrome of chronic anovulation and hyperandrogenism are at increased risk of obesity, diabetes, infertility, and miscarriage ***(Neveu et al., 2007)***.

Clomiphene citrate (CC) has been the standard treatment for ovulation induction in these patients for many years. Ovulation rates of 60 - 85 % and pregnancy rates of 30 - 40 % have been reported with this medication ***(Zawadzki and Dunaif, 1992)***. However, clomiphene citrate has been shown to be associated with cervical mucus abnormalities, luteal phase defects, ovarian cysts, and multiple gestations. Moreover, hot flushes and visual symptoms are other side effects of this medication ***(Palomba et al., 2006)***.

In 75% of patients with PCOS, ovulation induction occurs with clomiphene citrate treatment; however 25% of patients are clomiphene citrate resistant and require alternative treatment ***(Palomba et al., 2006)***.

For many years ago, the second line treatment in CC resistant PCOS women consisted of laparoscopic ovarian drilling or gonadotrophin use. The two approaches are similar in terms of ovulation and pregnancy rates. Furthermore, during gonadotrophin administration, a particular experience of the doctor is needed as well as careful sonographic and biochemical monitoring to avoid or to reduce the risk of ovarian hyperstimulation and multiple pregnancies. In addition, the treatment with gonadotrophins requires a relevant investment of time and

money ***(Gleicher, 2000)***. On the contrary, with the advent of laparoscopic techniques and with their wide use, LOD has been proposed as a once-only procedure to induce ovulation in CC-resistant PCOS women ***(Felemban et al., 2000)***.

Laparoscopic ovarian drilling is a day-surgery procedure characterized not only by effectiveness in ovulation induction comparable to gonadotrophin use but also by few side effects and no need for ongoing monitoring ***(Farquhar et al., 2000)***. In addition, LOD has beneficial effects at the metabolic level but effectiveness does not seem to be maintained after a long term follow up ***(Saleh et al., 2001)***.

The proportion of ovulation after LOD is about 77% but the chance of conception at 12 months after LOD was 54% only ***(Mustafa and Tulay, 2005)***. This can be attributed to post-operative adhesion formation.

Although there was marked improvement of hormonal profile in most patients after LOD ***(Godinjak et al., 2007)*** (LH and testosterone levels decreased in 75% and 70% of PCO patients respectively), the reported ovulation rate after LOD remain around 52.8 % only ***(Parsanezhad et al., 2005)***. Many studies concerning the endocrine effects of LOD have been performed ***(Vicino et al., 2000 and Alborzi et al., 2001)***, but few have emphasized on the cause of disparity between hormonal changes and ovulation rate. There is controversy whether the cause of this disparity is due to post-LOD hyperprolactinemia or not ***(Parsanezhad et al., 2005)***.