

Ovulation Induction with GnRH Agonist or Dual Trigger: A Comparative Analysis in Oncological Patients

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Objectives

Primary outcome was the number of MII oocytes retrieved, secondary outcomes were number of oocytes retrieved, estrogen levels at ovulation triggering, incidence of moderate-to-severe ovarian hyperstimulation syndrome.

Methods

This is a single-center, prospective observational cohort study conducted at IRCCS Azienda Ospedaliero-Universitaria di Bologna, between June 2023-January 2025, eligible participants included oncological patients requiring fertility preservation before gonadotoxic therapy, age <40 years old, BMI between 18 and 30 kg/m², AMH levels between 1 and 5 ng/mL. Controlled ovarian stimulation was initiated using a random-start protocol with recombinant FSH (150-300 IU/day), based on BMI and AMH levels. LH surge was suppressed through antagonist protocol. Ovulation induction was performed via dual trigger (1000-5000IU hCG + 0.2 mg Triptorelin) or GnRH-a alone (0.2 mg Triptorelin), based on clinical evaluation. Comparisons are presented as estimated mean difference (EMD) and corresponding 95% confidence interval (CI).

Results

A total of 24 patients met the inclusion criteria and were analyzed (Dual Trigger group: n=9, 37.5%; GnRH-a group: n=15, 62.5%). No significant differences were found between study groups in terms of number of MII [10.72 ± 6.28 vs. 8.86 ± 5.39 with estimated mean difference (EMD) of 1.86 (95%CI -3.50, 7.22)]. Exploring secondary outcomes, no significant variations in total number of oocytes retrieved [12.22 ± 7.54 vs. 11.5 ± 6.85 ; EMD 0.61 (95%CI -5.91, 7.15)] and estrogen levels [2170 ± 1736.72 vs. 975 ± 1150.39 pg/ml EMD 1195 (95%CI -219.09, 2609.09)] were observed. No case of moderate-to-severe ovarian hyperstimulation syndrome was reported in any group.

Dual trigger does not offer a significant advantage over GnRH agonist alone in terms of MII oocyte yield. Furthermore, dual trigger does not appear to improve oocyte retrieval rates, estrogen levels at the time of triggering, or risk of moderate-to-severe OHSS. Further randomized data is needed to evaluate dual trigger efficacy compared to GnRH agonist.

