40 egg donors - comparison of gonadotropin-releasing hormone agonist triptorelin vs. human chorionic gonadotropin for final oocytes maturation

Středa R1,2,3,4, Mardešič T1,2, Koryntová D2, Hybnerová L2, Jindra M2
1 Sanatorium Pronatal, Prague, Czech Republic
2 Pronatal Plus, Prague, Czech Republic
3 Department of Obstetrics and Gynaecology, University of Pardubice, Pardubice, Czech Republic
4 Faculty of Health Studies, University of Pardubice, Pardubice, Czech Republic

Objective and aim of the study:
The objective of the study is to compare gonadotropin-releasing hormone (GnRH) agonist triptorelin vs. human chorionic gonadotropin Pregnyl for final oocyte maturation in the same patients in two sequential egg donor cycles. The aim of this study is to prevent the risk of ovarian hyperstimulation syndrome (OHSS). The administration of a single dose of GnRH agonist (triptorelin 0,2 mg s.c.) induces the release of LH from the pituitary gland similarly to a spontaneous LH surge.

Design:
Prospective crossover study.

Materials and Methods: We analysed 80 cycles in 40 egg donors treated with recombinant follicle stimulating hormone (FSH) plus GnRH antagonist protocol. When at least 3 follicles reached a diameter of ≥ 17 mm we administrated Pregnyl 10 000 IU intramuscularly and triptorelin 0,2 mg subcutaneously for final oocyte maturation in the subsequent treatment cycle. We transferred 2 blastocysts on day 5.

Results:
The primary outcome measure was proportion of oocytes, mature oocytes and fertilized oocytes. The secondary outcome were duration of FSH stimulation, total dose of gonadotropins and clinical pregnancy rate. Data was analysed by paired t-test1 and Mc Nemar test2.

We retrieved 15,2 ± 7,1 vs. 14,3 ± 5,6 (ns)1 oocytes, 11,8 ± 5,4 vs. 11,5 ± 4,3 (ns)1 MII oocytes, MII proportion of oocytes (%) was 78 vs. 80 (ns)1, No. of fertilized oocytes 10,6 ± 4,9 vs. 10,5 ± 4,0 (ns)1, fertilization rate (%) 89 vs. 91 (ns)1 in Pregnyl’s vs. triptorelin’s group, resp. We proved duration of stimulation (days) 12,2 ± 0,9 vs. 12,7 ± 1,0 (ns)1, dose of gonadotropins (IU) 1807 ± 305 vs. 1924 ± 368 (ns)1, daily dose of gonadotropins (IU) 233 ± 51 vs. 231 ± 39 (ns)1, clinical pregnancy rate (%) 60 vs. 65 (ns)2 resp.

We cryopreserved 2.8 ± 2.3 vs. 3.3 ± 2.6 (ns) blastocysts. We observed 1 case of a mild OHSS in the Pregnyl’s group of donors and no complications in triptorelin’s group.

Figure 1: Number of oocytes
Figure 2: Number of MII oocytes

Figure 3: Total dose of gonadotropins (IU)
Conclusions:
Based on the results of this study there are no differences in number of mature (MII) oocytes, clinical pregnancy, implantation rate, duration of FSH administration and total consumption of FSH. Administration of triptorelin 0.2 mg is a safe and effective approach to achieve mature oocytes in egg donor cycles.

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Robert Středa, MD, Ph.D.
Sanatorium Pronatal, Na Dlouhé mezi 4/12, Praha, Czech Republic. e-mail: info@gynekologie-streda.cz