Long-Antagonist protocol; a new protocol where a bolus luteal dose of long-acting GnRH-antagonist Degarelix can efficiently downregulate LH during ovarian stimulation for IVF addressing flexibility in an antagonist protocol

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Objective:
The purpose of that study was to examine whether a bolus luteal dose of a new long-acting GnRH-antagonist can be compared with the classical short with follicular multiple doses antagonist protocol

Design:
In this randomized control trial, did participate 129 infertile women ≤39 years of age prepared to undergo IVF treatment in Assisting Nature Centre. Trial registration number was: NCT03684421 and performed between January2017-January 2019. Two groups of patients were compared: Control-Group (Short Antagonist group) consisted of 69 women, who followed a classic fixed day-6 GnRH-antagonist protocol whereas, Study-Group (new Long Antagonist Group) involved 60 women undergoing the new long-antagonist protocol. Both groups involved

Materials and Methods:
The new protocol was as follows: in late luteal phase (day-24) a bolus injection of 0.5 ml Degarelix was administrated subcutaneously. After menses, initiation of ovarian stimulation was flexible, with gonadotropins (200-300IU) could be initiated from cycle-day-2 to cycle-day-10 and no other dose of antagonists was allowed. In the classical short antagonist-group gonadotropins 200-300IU started on day-2 or 3 of the cycle and 0.25 mg of antagonist (ganirelix) was administered daily from stimulation day-6 in a fixed way. Ovulation triggering was administered when 3 follicles of 18mm were present and recHCG was used (unless more than 14 follicles were present then agonist triggering was proffered). Oocyte pick-up performed 36h later. Only blastocyst transfer was allowed and fresh/frozen embryotransfer was decided upon response and progesterone rise.

Results:
No LH rise was noticed first of all in any patient. The mean age (33,3 vs. 33,0) and AMH (2,4 vs. 2,1) were not different among groups. Nevertheless, duration of stimulation ranged from 9-10 days in control group, whether in study-group ranged from 10-11 days. Similar number of oocytes retrieved (10.8 vs. 11.8) and similar mean number of blastocysts produced in both groups (5.0 vs. 5.5). No OHSS case was reported. Fresh embryotransfer was performed in 30/69 patients in control-group and the rest 39 patients underwent frozen embryotransfer in a Freeze-All strategy. Similarly, fresh embryotransfer was performed in 20/60 patients in study-group and the rest 40 patients underwent frozen embryotransfer in a Freeze-All strategy. Cumulative ongoing/delivery rate was 44,9% (n=31/69) in classic antagonist (Control-group) and 50,0% (30/60) in the new Long Antagonist (Study-group), $p<0.05$.

Conclusions:
This pure novel concept combines the flexibility of the long agonist protocol, the security of the antagonist protocol, and eventually similar pregnancy efficacy as both of them used to. This new Long-Antagonist protocol addresses cycle programming that was missing with antagonist protocols and at the same time minimizes the risk for OHSS. It is for first time that a single dose of long-acting antagonist Degarelix, during luteal phase is described to efficiently down-regulate LH, produce mature eggs and implantable embryos. However, larger studies are required to confirm the success of this protocol.