Efficacy of a "delayed start" GnRH antagonist protocol in patients with poor ovarian response who undergoing in vitro fertilization

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Objective
To investigate whether so called "delayed start" GnRH antagonist protocol improves ovarian response in poor responder.

Material and Methods
The prospective study included 13 patients who responded poorly and did not get pregnant with previous conventional controlled ovarian hyper-stimulation (COH). 57 women who responded poorly during previous conventional COH protocol were included as control. The "delayed start" GnRH antagonist protocol is defined as COH protocol which used estrogen priming followed by early follicular phase GnRH antagonist treatment for 7 days before ovarian stimulation.

At first, we compared number of retrieved oocyte, mature oocyte and good embryo between "delayed start" GnRH antagonist and conventional COH protocol in the same patients. Secondly, we compare number of retrieved oocyte, mature oocyte and good embryo between "delayed start" GnRH antagonist protocol and control group. Also we compare pregnancy rate and clinical pregnancy rate between two groups.

Result
The patient characteristics were similar in three groups.

When we analyzed the outcomes between previous conventional COH protocol and consecutive "delayed start" protocol in same patients, the number of retrieved oocyte and mature oocyte were significantly higher in "delayed start" GnRH protocol than control group (2.92±2.1 vs. 1.54±0.9, p=0.044, 2.58±1.9 vs. 1.14±0.7, p=0.027 respectively). The pregnancy rate and clinical pregnancy rate have a tendency to higher in "delayed start" GnRH antagonist protocol compared to control group, but were not statistically significant (40.0% (4/10) vs. 24.2% (8/33), p=0.277, 30.0% (3/10) vs. 15.2% (5/33), p=0.266).

Conclusion
The newly suggested "delayed start" GnRH antagonist protocol seems to have an advantage to gain more oocytes in patients with poor ovarian response who undergoing IVF. However, to determine whether "delayed start" protocol is superior compared with other protocols for poor responders more large scaled prospective study would be needed.