

OVARIAN RESPONSES IMPACT ON THE OOCYTE QUALITY AND PREGNANCY OUTCOME

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Purpose: The aim of this study is to evaluate the number of retrieved-oocytes during controlled ovarian hyperstimulation and their impact on the oocyte/embryo developmental potential and pregnancy outcome.

Materials and methods: We retrospectively examined 2,491 cycles undergoing IVF therapy that with ovulation stimulation under gonadotropin-releasing hormone agonist (GnRH-a) suppressed cycles at Taipei Medical University from August 1995 to March 2009. They are classified into three groups according to the number of retrieved-oocytes as higher responders group H (retrieved-oocytes ≥ 19 , n=579), middle responders group M (retrieved-oocytes: 5 – 11, n=1298), and lower responders group L (retrieved-oocytes < 5, n=614).

Results: Total number of retrieved-oocytes had a significantly positive correlation with peak E2 level, the number of fertilized oocytes, good quality embryo and available frozen embryo. Furthermore, the number of retrieved-oocytes had a positive correlation with pregnancy rates and negative correlation with fertilization rates significantly. There was no significantly different in implantation rates and abortion rates among three groups. To compare with middle and higher responders, the pregnancy rates was significantly lower in lower responders. There was no significantly different between middle responders and higher responders in pregnancy rates.

Table-1: Ovulation and Pregnancy outcome in Lower (L), Middle (M), and Higher (H) responders

	Total	Lower Responders L	Middle Responders M	Higher Responders H
Group Cases	2491	614	1298	579
Age	34.4±4.2	34.3±4.0	34.3±4.2	34.7±4.2
Range of oocyte number	2-40	2-4	5-11	12-40
Duration of infertility	3.8±2.7	3.9±2.8	3.7±2.7	3.8±2.8
Oocytes Number	8.5±5.3	3.1±0.8	7.7±1.9	16.1±4.7
peak Estradiol	1334.2±1076.6	685.2±455.5	1243.1±854.6	2218.3±1368.5
Fertilization Rates %	66.6±22.1	76.5±23.8	64.9±20.8	59.8±19.6
Implantation Rates %	9.2±19.4	7.8±20.6	9.5±18.9	10.0±19.1
Pregnancy Rates %	30.4±46.0	19.4±39.6	32.4±46.8	37.7±48.5
Abortion Rates %	23.0±42.1	23.5±42.6	21.6±41.2	25.2±43.5
Live birth Rates %	23.4±42.4	14.8±35.6	25.4±43.6	28.2±45.0
Number of Embryo transfer	3.2±1.1	2.3±0.9	3.5±1.0	3.5±1.0
Number of Fertilized egg	5.4±3.6	2.3±0.9	4.9±2.0	9.6±4.1
Number of Grade I embryo	1.0±1.3	0.7±0.9	1.0±1.2	1.5±1.6
% of Grade 1 in fertilized egg	22.8±28.3	31.0±38.5	21.6±25.2	16.9±18.6
Number of Frozen embryo	1.0±2.6	0.0±0.1	0.5±1.3	3.4±4.3

Conclusion: Although women with more retrieved-oocytes had accomplished with significantly lower fertilization rates, they had more available fertilized oocytes and higher pregnancy rates. There was no significantly different in pregnancy rates between middle and higher responders, however, higher responders had significantly more available frozen embryo.