

침이라고 생각한다.

## O-24 Alternative ICSI Treatments in Human IVF-ET Program

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In the conventional insemination cycles, complete fertilization failure occurred in about 10% by variable factors, including poor oocytes quality, abnormal zona pellucida, cryptic spermatozoal defects and unknown problems. The complete failure of fertilization was very disappointed to both patients and clinicians. In this study, the clinical outcomes were evaluated the efficacy of alternative ICSI treatments, half-ICSI and next day-ICSI (NDI). The half-ICSI treatments, combining conventional insemination and ICSI in a given cycle, were performed in patients with normal sperm parameters. Mean fertilization rate ( $\pm$ SD) after conventional insemination and after ICSI were  $53.0 \pm 31.4\%$  and  $64.8 \pm 21.5\%$  ( $p < 0.01$ ), respectively. The complete failure of fertilization occurred in 14.5% of cycles (16/110) after conventional insemination but none after ICSI. The NDI treatments were performed in three groups of oocytes, such as in-vitro matured oocytes (group I), unfertilized oocytes after conventional insemination (group II), and after ICSI (group III). The fertilization rates of NDI were 48.9% (274/560), 45.2% (506/1,119) and 13.8% (36/261) in group I, II and III, respectively. The pregnancy rate in half-ICSI was 26.4% (29/110) and in NDI was 7.5% (6/80). However, 50.0% (4/8) of pregnancy rate was achieved in the cryopreserved-embryo transfer (cryo-ET) cycles of NDI treated embryos. We conclude that the half-ICSI treatments can prevent from the complete failure of fertilization, and the NDI treatments, especially combining with cryo-ET, are effective in the in-vitro matured oocytes and unfertilized oocytes after conventional insemination in human IVF-ET program.

## O-25 Y염색체 미세결실부위와 정자형성과정은 상관관계가 있는가?

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목 적: 불임환자에서 발견되는 Y염색체의 미세결실은 보통 3부위에서 흔히 발견되는데 이 부위를 AZFa, AZFb, AZFc로 나눈다. Vogt 등에 의하면 AZFa부위의 미세결실은 Type I Sertoli cell only (SCO) (Spermatogonia가 없는 경우)를 유발하고, AZFb부위 미세결실은 Spermatogenesis arrest를 유발하며, AZFc부위 미세결실은 Type II SCO (spermatogonia가 존재하면서 일부 제한되게 정자형성과정이 있는 경우)를 유발한다고 제시하였다. 저자들은 Y염색체 미세결실이 있는 불임환자의 경우 과연 이러한 미세결실부위에 따라 고환조직

검사결과와 정자 존재 유무가 상관관계가 있는지 알아보고자 했다.

대상 및 방법: 115명의 비폐쇄성무정자증 (NOA)과 30명의 폐쇄성무정자증 (OA) 그리고 30명의 심한 감정자증 (sperm concentration  $<5 \times 10^6/ml$ ) 환자를 분석하였다. 환자의 말초혈액에서 채취한 Leukocyte DNA를 PCR방법에 의해 분석하였다. STS marker로는 AZFa (sY 84,85,86), AZFb (sY129,134,135,143,RBM1), 그리고 AZFc (DAZ,sY242)를 분석하였고 PCR 결과는 Southern Hybridization에 의해 확인하였고 DAZ gene mutation을 알기위해 SSCP analysis 방법으로 분석하였다.

결 과: 폐쇄성무정자증 30명은 Y염색체 미세결실이 한명도 없었으나 비폐쇄성무정자증 115명중 15명 (13.0%), 심한 감정자증환자 30명중 4명 (13.3%)에서 한 부위 혹은 그 이상의 부위에서 미세결실이 관찰되었다. AZFc 부위에 미세결실은 9명 (3명의 심한 감정자증, 4명의 spermatogenic arrest, 2명의 Type I SCO)에서 AFZb부위는 4명 (1명의 심한 감정자증, 3명의 spermatogenic arrest) AFZa부위는 1명 (Type I SCO)에서 발견되었다.

결 론: Vogt 등에 의해 제시된 고환기능부전의 정도나 정자의 존재유무와 Y염색체 미세결실부위와는 상관관계가 딱 맞아 떨어지는 않았다. 그리고 AZFa부위의 Y염색체 미세결실은 아주 드물게 있음을 알 수 있다.

## O-26 Round-headed Spermatozoa로 ICSI 시술 후 동결-융해한 수정란의 이식에 의한 임신

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Round-headed spermatozoa (globozoospermia) lacked the acrosomal membrane and acrosin contents. So these spermatozoa are neither able to penetrate the zona pellucida of an oocyte nor to fuse with the oolemma and thus fail to complete fertilization *in vivo* and *in vitro*. A 29-year-old woman and her 30-year-old male partner presented with primary infertility of 2 years' duration due to male factor with "normal" volume (2.0 ml), concentration ( $64 \times 10^6/ml$ ) and motility (65%) but 100% round-headed acrosomeless spermatozoa by Diff-Quick staining. His karyotype was 47, XY, +21[7]/46, XY[33], mosaic Down syndrome. The ovarian stimulation cycle was carried out using the long protocol by GnRH $\alpha$ , FSH, hMG and hCG. After 34 hours of hCG injection, 38 oocytes were retrieved trans-vaginally under ultrasound guidance. Intracytoplasmic sperm injection (ICSI) of round-headed spermatozoa into 35 oocytes in metaphase II and assisted oocyte activation with calcium ionophore A23187 resulted in normal fertilization (60%-2PN: 86%, 3PN: 14%) and embryo development. A part of fertilized oocytes was cryopreserved. Two days after the ICSI, five pre-embryos of the good quality were transferred surgically to the uterine endometrium of the woman after assisted hatching, but no pregnancy occurred. After 2 months, the surgical transfer of frozen-thawed embryos after assisted hatching led to an ongoing pregnancy. Result of amniocentesis at 16+2 weeks of gestation was normal.