β-estradiol, 50 ng/ml FSH. The oocytes were fertilized with frozen thawed sperm in FertTALP medium. Matured oocytes were activated with both electrical stimulation and 6-dimethylaminopurin. Nuclear transfer of bovine ear fibroblast cells into ennucleated oocytes was accomplished by fusion method. Chromatin, α- and γ-tubulin assembly were determined by indirect immunocytochemistry and laser scanning confocal microscopy.

Results: During fertilization, a microtubule aster was observed near sperm chromatin, but γ-tubulin spot was not observed near the sperm chromatin. The maternal origin γ-tubulin spot was seen in late pronuclear stage and splits and form the poles for the frist mitotic spindle. During pathenogenesis, disarranged microtubules were observed, and anastral, barral-shaped bipolar mitotic spindle was seen in frist mitotic metaphase. γ-tubulin spots were not observed in parthenotes until 8-cell stage. Immediately after nuclear transfer, a microtubule aster containing a γ-tubulin spot was seen near the transferred nucleus. The γ-tubulin spot was split into two and forms the poles for the mitotic spindle.

Conclusions: There results suggest introduction of somatic cell centrosome during nuclear tranfer, which is different manner with those during fertilization and parthenogenesis in cattle.

B-7 무정자증 사람 정소에서의 Transforming Growth Factor-βs와 수용체 mRNA 발현

[1]포천중문의과대학교 차병원 여성의학연구소,
[2]고려대학교 자연자원대학 응용동물과학과

김현규[1,2] · 엄기붕[1] · 김현주[1] · 서동삼[2] · 이동률[1] · 고정재[1] · 차광열[1] · 고 용[2]

Transforming growth factor-β (TGF-β) family exert inhibitory actions on testicular cell proliferation and differentiation. This study was carried out to screen the mRNA expression of TGF-βs and their cognate receptors in the 17 human testis samples with obstructive azoospermia (OA, n=7) or non-obstructive azoospermia (NOA, n=10) using the reverse transcription polymerase chain reaction approach. We observed a higher expression of TGF-β mRNA in the testes in the NOA group than in the OA group. In the NOA group, in all cases of hypospermatogenesis (n=4) and Sertoli cell only syndrome (n=6), TGF-β1 mRNA was expressed. In the OA group, TGF-β1 mRNA was not detectable in 42.9% (3/7) of the cases. In both the OA and NOA groups, TGF-β2 mRNA expression was very rare. Only 29.4% (5/17, two cases in the OA group and three cases in the NOA group) of the cases showed a weak TGF-β2 mRNA expression. TGF-β3 mRNA was not expressed in 42.9% (3/7) of the cases in the OA group, but all cases in the NOA group expressed it. However, the intensity of the mRNA expression was weaker than that of TGF-β1 mRNA. In the study of receptor mRNA, 82.4% (n=14) expressed TGF-βRI mRNA. However, we could not find a TGF-βRII mRNA expression when the positive control showed a mRNA expression. In conclusion, TGF-β1 may be more prevalent in human spermatogenesis than TGF-β2 and -β3 at least in the cases of azoospermia.