conceived infants.

**Methods:** We compared the overall birth defects of infants conceived by IVF/ICSI (n=1776) at Cheil general hospital from Aug. 1997 through Aug. 2006, with a cohort of naturally conceived children (n=3445). These datas were obtained from the clinical data from the obstetric and pediatric records, including the information obtained through telephone. We also preformed the analysis of the birth defects by the type of each ART procedure (i.e., IVF vs ICSI) in infants delivered after 20 weeks of gestation.

**Results:** The overall incidence of birth defects for IVF/ICSI infants were 4.2% (n=75), which was higher than that of the control group (3.0%) (p=0.02). When major defects were evaluated by affected organ system in IVF/ICSI infants, cardiovascular (1.4%, n=25), musculoskeletal (0.5%, n=9) and orofacial (0.45%, n=8) defects are most frequently affected, additionally, the rate of chromosomal abnormality was 0.7% (n=12). The commonly affected organ in the natural conceived infants were orofacial (3.0%), musculoskeletal (2.0%), central neural system (1.8%) and cardiovascular (1.3%) defects, in order. The odds ratio for having any major congenital anomaly was 1.4 (95% CI 1.047~1.917) in IVF/ICSI group. When each IVF procedure was compared, an increased odds ratio was found in the crude analysis for ICSI group. We found the same result after the adjustment for maternal age (OR=1.742; 95% CI 1.112~2.730) in ICSI group, but the risk was not increased in IVF group (OR=0.677; 95% CI 0.383~1.197).

**Conclusion:** Major birth defects were slightly increased in infants conceived through IVF/ICSI. Especially, ICSI conceived children had higher chance of birth defects than naturally conceived children or IVF children. Furthermore, larger, population based studies are needed for the systematic evaluation of the obstetric and perinatal outcomes, as well as long-term follow-up of these children.

## P-43 Risk of Monozygotic Twins after Blastocyst Transfer: A Meta-analysis

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**Objectives:** It has been known that IVF/ICSI treatment increases the incidence of monozygotic twins (MZT) three to twenty times compared to general population; 0.42% in general population and 1.2~8.9% in IVF population. After the first report of an increased rate of MZT with blastocyst transfer in 1998, its precise incidence has not been established. Several authors reported an increased incidence of MZT after blastocyst transfer compared to conventional cleavage stage embryo transfer, but the results were somewhat inconsistent. Since MZT is a rare event and several studies lack a power to show an increased incidence of MZT with blastocyst transfer, this may not allow for the statistical significance to be reached. The aim of this meta-analysis was to assess whether the incidence of MZT after blastocyst transfer increase compared to day 3 embryo transfer in fresh IVF cycles.

***Methods:*** A literature search of the National Library of Medicine and the National Institutes of Health (PubMed) was performed using the key words 'monozygotic twins' and 'blastocyst'. The last search date was August 2007. The original

articles directly comparing MZT rate after blastocyst versus day 3 embryo transfers were included. Six studies met the inclusion criteria and were reviewed. A meta-analysis was performed using Review Manager (RevMan ver. 4.2 for Windows, The Nordic Cochrane Centre, Copenhagen, Denmark), and the fixed effect model was used because there was no heterogeneity in this comparison (chi-square test=11.10, df=5, p=0.05; I2=54.9%).

**Results:** Risks of MZT were consistently higher after blastocyst transfer than day 3 embryo transfer in all of the six studies, but a statistical significance was not achieved in two reports. The simple pooling of the data from six studies showed a significant higher MZT risk after blastocyst transfer (1.71%, 142/8,291) than that after day 3 embryo transfer (0.42%, 123/29,422) (Odds ratio = 4.15, 95% CI = 3.26 to 5.29). The results of meta-analysis using fixed effect model also demonstrated a statistically significant higher risk of MZT after blastocyst transfer than day 3 embryo transfer (Odds ratio = 3.77, 95% CI = 2.95 to 4.82).

**Conclusion:** The result of meta-analysis suggests that the risk of MZT is significantly higher with blastocyst transfer compared to day 3 embryo transfer in fresh IVF cycles. According to the combined data, the incidence of MZT after blastocyst transfer was 1.71%.

## P-44 저반응군 불임여성의 체외수정에서 한 개의 배아 이식 시 임신에 영향을 주는 요인

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**Objectives:** 난소기능이 저하된 저반응군 불임여성에서 한 개의 배아를 이식할 때 임신율에 영향을 주는 요인에 대해 알아보고자 한다.

**Methods:** 본원에서 1996년부터 2006년까지 시험관 시술을 받은 환자 중, basal FSH가 12 mIU/mL 이상, 획득된 난자가 4개 이하, hCG 투여일에 혈청 E2가 500 pg/ml 미만인 저반응군 총 919주기에서 한 개의 배아만을 이식한 235주기를 대상으로 하였다. 여성의 연령, hCG 투여일에 혈청 E2, basal FSH, 이식 시 blastomere 개수, 이식횟수에 따른 임신율과 생존아 출생률을 비교하였으며, 통계학적인 방법은 Chi-square를 이용하여 p-value 0.05 이하인 경우를 유의하게 평가하였다.

**Results:** 총 919주기 중 난자채취 취소율은 25.6% (235주기), 난자채취 실패율은 18.5% (170주기), 배아이식 취소율은 14.0% (129주기)였다. 한 개의 배아를 이식한 군의 전체 임신율은 8.1% (19주기), 생존아 출생률은 4.7% (11주기) 였고, 35세 이하의 여성에서 35세 이상의 여성보다 임신율과 생존아 출생률이 통계적으로 유의하게 높았다 (20% vs. 8.8% p<0.0001, 12.3% vs. 4.4% p=0.004). hCG 투여일에 혈청 E2, basal FSH, 이식 시 blastomere 개수에 따른 임신율과 생존아 출생률은 차이가 없었다. 이식 횟수에 따른 누적 임신율은 1회에 8.1%, 2회에 9.2%, 3회에 9.7%, 4회에 9.0%, 5회에 9.5%였다.

**Conclusion:** 저반응군의 체외수정에서 한 개의 배아를 이식할 때, 불임 여성의 연령이 35세 이하에서 임신율과 생존아 출생률이 유의하게 증가함을 확인하였고, 이식 횟수에 따른 누적임신율은 차이가 없었다. 이는 체외수정을 시도하려고 하는 난소기능 저하의 불임여성에서 구체적인 상담 자료로 사용할 수 있겠다.