

fertility. Endometrial polyps were found in 273 women (63.0%) with endometriosis and in 59 controls (29.8%,  $p=0.0000$ ). Their frequency differed significantly according to stage of endometriosis. In endometriosis group, expressions of Ki-67, Cox-2, and Nf-kB were significantly higher than that in the control group. Cell proliferation was significantly increased also in endometriosis group ( $p<0.05$ ). But expression of Bcl-2 was significantly lower than that in the control group.

**Conclusions:** We suggested increased endometrial proliferation was one of the possible mechanisms in endometriosis. Taken together, we strongly recommend hysteroscopy if endometriosis is detected in a woman undergoing evaluation for infertility.

## P-32 Determination of Bisphenol A Concentrations in Human Umbilical Cord Blood Serum and Amniotic Fluid

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**Background & Objectives:** There is broad human exposure to bisphenol A (BPA), an estrogenic endocrine-disrupting chemical widely used for the production of plastic products as well as in dentistry and food packaging. BPA is reported to affect preimplantation embryos or fetuses and alter their postnatal development and sexual maturity at the very doses detected in the environment. In the present study, BPA concentrations were determined in the human umbilical cord blood serum and amniotic fluid in order to estimate the risk of BPA exposure to human fetuses.

**Method:** All the human biological fluids were obtained from women who visited the department of Obstetrics and Gynecology in Yonsei University Medical Center, with informed consent. The umbilical cord blood samples were obtained at full-term delivery and the amniotic fluids were obtained by amniocentesis at 20 weeks gestation (early pregnancy). The determination of BPA concentrations was performed by a novel enzyme-linked immunosorbent assay (ELISA) for BPA, which was developed by Takeda chemical industries. The assay range was 0.2~50 ng/ml of BPA. The cross-reactivity for 17 $\beta$ -estradiol was below 0.001%.

**Results:** The mean serum BPA concentrations in umbilical cord blood were 10.37 ng/ml, and individual values were ranged from 6.83 to 19.05 ng/ml. Compared to the level in the umbilical cord blood serum, surprisingly much higher concentration, 301.19 $\pm$ 255.58 ng/ml (mean  $\pm$  SD) of BPA was detected in the amniotic fluids.

**Conclusions:** Present study demonstrated the presence of BPA in the human umbilical cord blood serum and amniotic fluid and these results suggest the possibility of significant exposure to the fetus during the prenatal period, although there is much to be elucidated about the involvement of early BPA exposure in

the abnormal development of reproductive organs and sexual maturation in human. The postnatal effects on the development of human fetuses exposed to amniotic fluid containing high level of BPA should be studied in the future.

## P-33 신선 고환정자 또는 동결융해 후 고환정자의 운동성 향상을 위한 배양이 임상결과에 미치는 영향

손지은 · 최경희 · 이을순 · 이동률 · 원형재 · 정태규  
이우식 · 차광열 · 윤태기

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**Background & Objectives:** 고환내 정자추출술로 얻은 신선 또는 동결융해된 고환 정자의 체외배양은 정자의 운동성을 증진시켜 이를 이용한 보조생식술 시술을 용이하게 한다. 그러나 최근들어 별도의 체외배양에 의한 정자의 DNA의 손상과 이로 인한 유산율의 증가 가능성이 보고된 바 있다. 따라서 본 연구는 신선 또는 동결융해된 고환정자의 배양 여부에 따른 세포질내 정자직접주입술 (ICSI) 후 임상결과를 분석하고자 수행하였다.

**Method:** 본 연구는 2000년 1월부터 2004년 12월까지 강남차병원 여성의학연구소에서 시행된 고환정자를 이용하여 ICSI를 실시한 590례를 대상으로 시행하였다. 본 연구에서는 세가지 유형의 고환정자 (Group 1: 신선정자 (n=152), Group 2: 24시간 배양된 고환정자 (n=187), Group 3: 동결해동 후 24시간 배양된 고환정자 (n=251))를 이용하여 수정을 유도하였고, 각종 임상결과를 분석하였다.

**Results:** 세 군간의 임상소견 및 이식된 배아의 수는 차이가 없었다. 또한 각 군간의 임신율 (35.0% (49/140) vs. 41.6% (69/166) vs. 37.2% (86/231)) 및 착상율 (12.7% (72/567) vs. 15.8% (102/644) vs. 15.3% (127/828))에 있어서도 유의차가 나타나지 않았다. 총 204례의 임신 중 임신추적이 가능했던 경우는 165례 (80.5%)였으며, 이 중 유산율은 세 군 (21.1% (8/38) vs. 19.6% (11/56) vs. 14.1% (10/71))에서 의미 있는 차이를 보이지 않았다. 또한 태어난 158명의 영아들 중 중요한 기형적 이상은 발견되지 않았다.

**Conclusions:** 이상의 결과들을 종합해 볼 때 신선 또는 동결융해 후의 고환정자의 배양은 임상결과에 부정적 영향을 주지 않는 것으로 나타났으며, 또한 배양 후 운동성 있는 정자의 확보는 세포질내 정자직접주입술의 시행을 용이하게 하였다. 하지만 DNA손상 등과 같은 잠재적 위험요인을 줄일 수 있는 배양체계의 구축이 필요하다고 사료된다.