## P-51 Molecular Analysis of the FSH Receptor and LH Gene in Korean Premature Ovarian Failure (POF) Women

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This study was performed to determine whether the FSH receptor and LH gene missense mutation is present in Korean women with POF. Forty-five women with idiopathic POF, five women with known causes and fifty normal controls were investigated. The polymorphisms of FSH receptor exon 10 (Thr307Ala; A919G) and LH exon 2 (Trp8Arg; TGG to CGG and Ile15Thr; ATC to ACC) were studied in 45 Korean POF (infertile) patients and 54 normal (control) women.

Missense mutation in Exon 10 was detected in POF women by PCR-SSCP. The most frequent phenotype was FSHR10 AG type (42.9%) followed by FSHR10 GG type (35.7%) and FSHR10 AA type (21.4%). The allele frequencies of *FSHR10G* and *FSHR10A* were 0.57 and 0.43, respectively.

The two loci of LH exon 2 (LH2) were studied in POF patients and normal women. The phenotypic frequencies of LH2 (Trp8Arg) in POF patients were LH2 1-1 type (89.9%) and LH2 2-1 type (11.1%). The allele frequencies of *LH21* and *LH22* were 0.956 and 0.044, respectively. The allelic frequencies of *LH21* and *LH22* in normal women were 0.963 and 0.037, respectively. The phenotypic frequencies of LH2 (Ile15Thr) in POF patients were LH2 TT type (86.7%) and LH2 TC type (13.3%). The allele frequencies of *LH2T* and *LH2C* in POF patients were 0.933 and 0.067, respectively. The allelic frequencies of *LH2T* and *LH2C* in normal women were 0.963 and 0.037, respectively. The LH2 variant was more frequent in the patients (20.0%) than in the controls (16.7%). The prevalence of POF did not differ between patients with variant LH and normal LH. POF patients with the variant was slightly higher than normal women with the variant.

## P-52 시험관아기과정에서 보조부화술의 방법이 임신율에 미치는 영향

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시험관아기프로그램에서 임신율을 높이기 위한 한 방편으로서 보조부화술 (Assisted Hatching)이 실시되어 왔으며, 일반적으로 긍정적인 효과가 인정되고 있다. 현재 보조부화술은 투명대 부분절개법 (Partial zona dissection; PZD)에 의한 투명대의 부분적인 절개와 산

성액 (Acidic Tyroid's solution)을 이용한 투명대에 구멍을 만드는 방법 혹은 레이저 기계를 이용하여 투명대에 구멍을 만드는 방법 등의 물리적, 화학적 방법으로 투명대의 일부를 자르거나 구멍을 내는 방법과 효소를 사용하여 투명대를 얇게 하거나 성격을 바꾸는 방법들이 개발되어 있다.

차병원 여성의학연구소에서는 이들 방법중 2중 투명대부분 절개법과 산성액을 사용한 두 가지 방법을 실시하여 그 효과를 검토하였다. 보조부화술의 적용범위는 기초FSH가 높을 경우, 투명대가 두꺼운 경우, 정상적으로 수정란이식을 하였으나 2회 이상 임신에 실패한 경우, 여자환자의 나이가 37세 이상인 경우 등과 동결융해후의 수정란을 대상으로 하였고, 수정란이식전 (day 3)에 보조부화술을 실시하였다.

연구결과로서 신선한 난자를 대상으로한 2중 투명대 절개법을 실시했을 때의 임신율은 30% (33/110)이었고 대조군의 임신율은 25% (25/100)이었으며, 동결 융해했던 경우에는 보조부화술을 실시했을 때 22.2% (4/18), 이의 대조군이 11.8% (2/17)의 임신율을 나타냈다. 이에 반하여 산성액을 사용하여 보조부화술을 실시했던 경우에 신선한 난자를 이식했을 때의 임신율은 33.7% (32/95), 대조군의 임신율은 28.6% (24/84)이었고 동결융해한 수정란을 이식했을 때의 임신율은 26.1% (12/46), 대조군은 25.5% (14/55)였다.

본 연구의 대상의 례수가 많지는 않지만, 2중 투명대 절개법이나 산성액을 사용하여 보조부화술을 실시했던 경우에 두 가지 모두 임신율증진에 효과가 있었으며 두 방법에 의한 임신율의 통계적 유의차는 없었다.

## P-53 Isolation of Factors from Human Follicular Fluid Affecting on Human Sperm Motility

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Follicular fluid alters the physiology and behavior of spermatozoa by increasing acrosome reaction, accelerating capacitation, attracting the spermatozoa and enhancing vigorous motion of the cell. These experiments were carried out to investigate the effective component(s) of human follicular fluid (hFF) as a supplement on enhancement of human sperm motility as well as effective use of hFF. The composition of hFF was analysed. In order to determine the characteristics of the active factor(s), hFF was subjected to gel liquid chromatography (LC), radioimmunoassay (RIA), gel high pressure liquid chromatography (HPLC), sodium dodecyl sulfate (SDS) - polyacrylamide gel electrophoresis (PAGE), UV-VIS and infrared (IR) spectrometers. Follicular fluid and its fractions were tested for stimulation of spermatozoa motion using a standardized assay which employs a computerized digital imaging system.

The results showed that both hFF and its fractions (group I, group III) from LC stimulated sperm motility. The sperm motility was significantly higher in group I than other groups ($p<0.05$).