vs AIG: 4.8 ± 3.9, p=0.2) and hormonal evaluation did not differ significantly between groups. Moreover, SHBG levels were more reduced in SGAs, but without a significant difference (SGA: 54.9 ± 24.3μg/dL vs AIG: 63.0 ± 36.7μg/dL, p=0.08). Finally, the PCOS phenotypes did not different between SGA and AGA [Severe (SGA: 50% vs AGA 55.5%, p=0.93), HA+CA (SGA: 12.5% vs 11.1%, p=0.93), HA+US (SGA: 12.5% vs AGA: 16.7%, p=0.93), HA+US (SGA: 25% vs AGA: 167%, p=0.93).

CONCLUSIONS: SGA women represent a risk group for the development of PCOS during reproductive period.

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ESTROGEN RECEPTOR α GENE POLYMORPHISMS IN PATIENTS WITH IDIOPATHIC PREMATURE OVARIAN FAILURE. S. H. Yoon, S. Y. Ku, E. G. Min, B. M. Kang, S. T. Oh, Y. M. Choi. Department of Obstetrics and Gynecology, Dongguk University Ilsan Hospital, Goyang, Gyeonggi, Republic of Korea; Department of Obstetrics and Gynecology, College of Medicine, Seoul National University, Seoul, Republic of Korea; Department of Obstetrics and Gynecology, College of Medicine, University of Ulsan, Asan Medical Center, Seoul, Republic of Korea; Department of Obstetrics and Gynecology, Chonnam National University College of Medicine, Gwangju, Republic of Korea.

OBJECTIVE: It has been reported that polymorphisms in the ER-α gene (*ESR1*) may be associated with reproductive patterns of women. This study was performed to investigate whether the genetic polymorphisms of the ER-α are associated with idiopathic premature ovarian failure (POF) in a Korean population.

DESIGN: Case-control study

MATERIALS AND METHODS: The subjects consisted of 126 patients with idiopathic POF and 221 postmenopausal healthy controls. Genotyping of the *PvuII and Xba*I polymorphisms in the ER-α gene was performed by real-time polymerase chain reaction (PCR) analysis and TA dinucleotide repeat polymorphism was assessed by fluorescent PCR. Haplotypes were deduced by using the Haploview version 4.1.

RESULTS: There was a significantly higher incidence of alleles with shorter (TA)n repeats (12-15 repeats) in the POF patients compared to the control group (59.9% vs. 50.9%, $p = 0.022$). *For the Pvu*II polymorphism, the POF group showed a higher incidence of TT genotype compared with the controls (41.3% vs. 26.3%, $p = 0.007$). No significant difference was found in the genotype distributions or allele frequencies of the *Xba*I polymorphism between the POF and the control group. Haplotype analysis showed that the incidence of TA haplotype was significantly higher in the POF patients compared with the controls (64.7% vs. 52.7%, $p = 0.002$).

CONCLUSIONS: These findings suggest that the ER-α gene polymorphisms may be associated with idiopathic POF.

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DIFFERENTIAL GENE EXPRESSION IN HUMAN GRANULOSA CELLS FROM RECOMBINANT FSH VERSUS HUMAN MENOPAUSAL GONADOTROPIN OVARIAN STIMULATION PROTOCOLS FOR IVF. J. D. Brannian, K. M. Eyster, B. Anderson, M. Greenway, K. A. Hansen. OBGYN, Sanford School of Medicine of the University of South Dakota, Sioux Falls, SD; Sanford Research USD, Sioux Falls, SD.

OBJECTIVE: The study was designed to test the hypothesis that granulosa cell (GC) gene expression differs between pure FSH and FSH/LH stimulation regimens.

DESIGN: Randomized, prospective.

MATERIALS AND METHODS: Females < 35 years-old undergoing IVF for tubal or male factor infertility were prospectively randomized (n=4 per group) to one of two stimulation protocols, GnRH agonist long protocol plus individualized dosages of (1) recombinant (r)FSH (Gonal-F®) or (2) purified human menopausal gonadotropin (hMG; Menopur®; 75 IU FSH/75 IU LH per vial). Follicle development was monitored by ultrasound and serum E2 levels. When two follicles were ≥17mm, hCG (10,000 IU; Novarel®) was administered. Oocytes were retrieved 35 h post-hCG. Following oocyte recovery, GC were immediately collected in RNALater®. Pooled GC from individual patients were washed, centrifuged over 40% percoll, resuspended in RNALater, and snap-frozen in LN. Total RNA was extracted and stored at -70°C. Biotinylated cRNA was synthesized from total RNA and each sample was run individually on CodeLink Whole Human Genome Bioarrays (Applied Microarrays). Unnamed genes and genes with <2-fold difference in expression were excluded from further analysis.

RESULTS: After exclusions, 1738 genes exhibited differential expression between groups. Over 400 were categorized as signal transduction genes, ∼180 as transcriptional regulators, and ∼175 as enzymes/metabolic genes. Expression of selected genes was confirmed by RT-PCR. Differentially expressed genes included A kinase anchor protein 11, bone morphogenic protein receptor II, EGF, IGFBP4, IGFBP5, TIMP2, and hypoxia-inducible factor-1 alpha.

CONCLUSIONS: The results suggest that major differences exist in how pure FSH alone versus FSH/LH regulate gene expression in preovulatory GC that could impact oocyte maturity and developmental competence.

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SELF INJECTED GONADOTROPHINS – A SYSTEMATIC REVIEW OF HUMAN DERIVED VS. RECOMBINANT ONES. H. G. Al-Inany, A. Abousetta. Cairo University, Cairo, Egypt.

OBJECTIVE: Recombinant gonadotrophins were marketed based on their purity and hence being self injected. Current purification processes allowed the production of human derived gonadotrophins of high purity and hence can be self injected. Still, there is still difference in cost of recombinant drugs being more expensive. The objective is to compare between human derived gonadotrophins and recombinant FSH in assisted conception program.

DESIGN: Meta-analysis of RCTs comparing only commercially available highly purified gonadotropins versus recFSH was performed.

MATERIALS AND METHODS: Meticulous computerized and hand searches were conducted to identify relevant trials. Primary outcome measures were the live-birth rate and rate of developing ovarian hyperstimulation syndrome. Pooling of studies was performed using the Mantel-Haenszel fixed effect model.

RESULTS: Search strategy located 13 trials (3984 women) that fit the inclusion/ exclusion criteria, and data was extracted to allow for an intention-to-treat analysis. For the primary outcomes, live-birth (O.R = 1.14, 95% CI = 0.98 to 1.32) and OHSS rates (O.R = 1.14, 95% CI = 0.77 to 1.71) were not significantly different between the two groups. In a subgroup analysis of highly purified human menopausal gonadotropin (hMG) versus recFSH, the live-birth (O.R = 1.10, 95% CI= 0.93 to 1.30) and OHSS rates (O.R = 1.14, 95% CI = 0.75 to 1.74) were also not significantly different. Similar results were demonstrated for HP-FSH versus recFSH [live-birth rate (O.R = 1.30, 95% CI= 0.92 to 1.84); OHSS rate (O.R = 1.14, 95% CI = 0.32 to 4.04).

CONCLUSIONS: Highly purified gonadotropins, collectively and individually, have been demonstrated to be non-inferior to recFSH with regards the clinical outcomes and patient safety during assisted reproduction.

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ASSOCIATION OF SCAVENGER RECEPTOR CLASS B, TYPE I (SR-BI) SNPS WITH FERTILITY OUTCOMES IN INFERTILE WOMEN UNDERGOING IVF. M. M. Yates, A. Kolmakova, S. Ibrahim, Y. Zhao, J. Garcia, A. Rodriguez. Gynecology and Obstetrics, The Johns Hopkins University School of Medicine, Lutherville, MD; Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD.

OBJECTIVE: It has been demonstrated that abnormalities with scavenger receptor class B, type I (SR-BI) are associated with infertility, atherosclerosis, and abnormalities of high density lipoproteins (HDL). We sought to further investigate specific genetic variants of SR-BI and their associations with IVF outcomes.

DESIGN: Prospective, ongoing investigation of patients undergoing IVF.

MATERIALS AND METHODS: From November 2007 to March 2009, granulosa cells were isolated from the follicular fluid of 135 women