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Expression profile of *HOXA* 6-13 genes in women with polycystic ovaries

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Statement of the Problem: Polycystic ovarian syndrome (PCOS) as an ovarian disorder and multifactorial disease involve 6-15% of women in the fertility age. Probably, some factors effect on the *follicogenesis*, so were caused PCOD (polycystic ovary diagnosis). Genetic and environmental agents are of main factors in this regard. Genetic polymorphisms or mutations, X-linked and autosomal dominant inheritance, paternal metabolic syndrome and altering gene expression are example of genetic factors. Deregulation of *HOX* genes in various diseases was studied by scientists. *HOX* family genes code transcription factors that influence transcript target genes. Some studies have confirmed the role of these genes in follicogenesis and reproductive system evolution. Cumulus cells encircle the oocyte and can influence in the function of oocyte through cell-to-cell communication. The aim of this study was to focus on the expression pattern of *HOXA* family genes in cumulus oophorus in women with PCOS and PCOD vs. control (healthy samples).

Methodology & Theoretical Orientation: Cumulus cells were extracted from women with PCOS and PCOD and normal women (infertile men's wife). RNA was extracted from these cells, and cDNA was synthesized consequently. The expression of *HOXA* genes were checked with real-time PCR using designed primers. Data were analyzed with SPSS.

Findings: As shown in the chart, we observed increased expression of *HOXA9*, 13 in PCOS vs. PCOD and control; increased expression of *HOXA6* in PCOS and PCOD vs control, and increased expression of *HOXA7*, 10, 11 in PCOS women vs. control.

Conclusion & Significance: We found hyper expression of *HOXA* genes in women with polycystic ovaries. Thus the regulation of expression of these genes can be considered in improvement of women diagnosed with PCO.

Biography

Soltani-Bayat Mehri is pursuing her MSc in Molecular-Cellular Biology at Hakim Sabzevari University. She is working on her thesis about gene expression in PCOS patient in Royan Institute.

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