Identification of genomic variants and microRNAs Related to Polycystic Ovary Syndrome in Pakistani women

Dr. Irfana Liaqat
Assistant Professor
Department of zoology
GC University, Lahore, Pakistan

Abstract

Polycystic Ovary Syndrome (PCOS) is a heterogenous endocrine disorder affecting 5 to 15% females of reproductive age. PCOS is characterized by hirsutism, chronic anovulation, hyperandrogenism, insulin resistance, infertility and risk of type 2 diabetes. Genetically distinct PCOS women and controls, 288 each, were selected on the basis of their Body Mass Index (BMI) and degree of obesity. These subjects were analyzed by real time PCR and direct sequencing to determine the potential biomarkers associated with the syndrome. This study identified new single nucleotide polymorphisms (SNPs) associated with the onset of PCOS in Pakistani women. The various miRNAs seems to be potential regulators of various gene expressions in PCOS and its related reproductive disorders. This raises the vision of using miRNAs as disease biomarkers and therapeutic tools to treat PCOS. Identification of miRNAs lessens the health care cost and improves the work productivity of PCOS females. Various risky health phenomenons in relation to PCOS may triggered by plasma micro RNA (miRNAs) which possibly, could be changed by therapeutic techniques used for PCOS.

Image

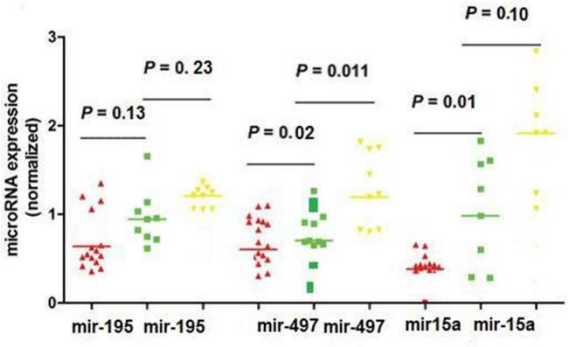


Figure: Validation of microRNA expression by qRT–PCR analysis from women with PCOS and control. MicroRNA expression data are presented as fold change relative to the control. Data are represented by scatter plots. The line represents the median value. The p-values were calculated by the Mann–Whitney U-test. Red indicates married women with PCOS, yellow unmarried women with PCOS and green indicates control.

Recent Publications (minimum 5)

1. Liaqat, I., Jahan, N., Krikun, G. and Taylor, H.S. (2015). Genetic Polymorphisms in Pakistani Women with Polycystic Ovary Syndrome. Reproductive Sciences. 22(3): 247-257. (DOI: 10.1177/1933719114542015).
2. Liaqat, I., Jahan, N., Lone, K.P, Pakstis, A. and Taylor, H.S. (2013). Genetic polymorphisms associated with endometriosis in Pakistani women. Journal of Endometriosis. 5(4): 134 – 143. DOI:10.5301/je.5000165.
3. Liaqat, I., Lone, K.P, and Taylor, H.S. (2016). Genetic polymorphisms of INSR and ADIPOQ genes associated with PCOS Pakistani population. (Accepted by JIMR. Manuscript ID JIMR-16-0992.).
4. Liaqat, I., Lone, K.P, and Taylor, H.S. (2017). Association of genetic variants of follicle stimulating hormone (FSHR) with endometriosis. (Under review. IJEB)

Biography



Dr. Irfana Liaqat is currently working as Assistant Prof. at department of Zoology GC University Lahore Pakistan. She completed her PHD on female reproductive disorders. She spent one year at Yale school of medicine, Yale University USA to complete her research work. She got two scholarships during her PHD. She published her papers in reputed journals and has been serving as reviewer of reputed journals including Plos one, endocrine connections, Indian Journal of Experimental Biology and Biologia. She is also member of editorial board of reputed peer review journals. She has Physiology, Genetics, Endocrinology, Infertility, PCOS, endometrisos and Epigenetics as her major area of research intrest.

Email: irfana.liaqat@gcu.edu.pk