

ROLE OF IL-17A GENE POLYMORPHISMS IN IRAQI RENAL FAILURE PATIENTS

Saja Mohammed Mohsen^{1*}, Mohammed Abdul-Daim Saleh² and Abbas Abood Farhan³

¹Department of Nursing Technical, Baquba Technical Institute, Middle Technical University, Baquba, Iraq.

²Department of Biotechnology, College of Science, Diyala University, Diyala, Iraq.

³Department of Biology, College of Education for Pure Science, Diyala University, Diyala, Iraq.

*e-mail : sajamu8@gmail.com, sajamohammad@mtu.edu.iq

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ABSTRACT : Renal failure (RF) is common disease, it is decrease of function of the kidney, glomerular filtration rate (GFR) this use to estimate the kidney function reduction usually is less than 60 mL / min, depending on global Burden of Disease, and the disease is ninth cause of death in the world, According to the global Burden of Disease. Our study is investigated in the relationship between IL-17A (rs2275913) genepolymorphic variants in renal failure patients in Iraq. This study was accompanied around Iraqi renal failure patients, the period from February to November 2018. This study included 70 patients from Abn-Sina Center for dialysis and kidney disease and 30 healthy controls. Tetra-primer ARMS-PCR is rapid, effective and developed assay used our study for studying in genotyping polymorphism of IL-17A(rs2275913) gene . Result of our report including IL-17A (rs2275913) gene is non-significant difference between control and patients when genotype G/ G (OR = 0.94). Also, and no there marked difference between control and patients when genotype A/A (OR = 0.51), while the genotype G / A (OR = 2.25) show an effective difference between control and patients. In conclusion, IL-17A geneplay an essential role as pro-inflammatory cytokine in renal failure patients and development disease.

Key words : Renal failure patients, rs2275913, IL-17A gene, ARMS –PCR.

INTRODUCTION

Kidney is important organ, its function is regulation of the blood composition and volume, filtration the urine by eliminating the metabolic wastes, secretion of the end metabolism products and maintenance the acid or balance in the body via regulate fluids and electrolytes (Aitken *et al*, 2014). Renal failure (RF) is common disease, usually is defined as the decrease of kidney function, glomerular filtration rate (GFR) this use to estimate the kidney function reduction usually is less than 60 mL / min (Akpan and Ekrikpo, 2015).

Interleukins- 17A (IL-17A) type of cytokine produced from Th 17 cells act on Stimulate inflammation and causing organ injury, also act on enhancing produce of pro-inflammatory cytokines by resident cells, that lead to increase penetration of neutrophils to affected organ and induce inflammation and damage in this organ such as kidney (Zhao *et al*, 2018; Summers *et al*, 2014). All these interleukins are similar in structure protein, but have in the N termini large sequence divergence.

Interleukins-17A gene are located on chromosome 6p12.3-q13 and each consists of three exons and two

intronthe transcribed occurs in opposite direction, cytokine genes resulting together during gene replication also use same regulatory elements. In human, about of 50 % sequence identity between IL17A and IL17F, both of these types produce homodimer and heterodimer proteins (Angkasekwina and Dong, 2011). Cytokine production may be effected by cytokine gene Polymorphisms through effect this gene on transcription. Single nucleotide polymorphisms (SNPs), acts on induce susceptibility or resistance to any infection, also may be used to diagnose some factors that contribute to cancers or inflammatory disease because SNP occurs in regulatory regions for cytokine gene (Bagheri *et al*, 2006). Tetra-primer amplification refractory mutation system PCR (T-ARMS-PCR), these methods is very important to detect (SNP) genotyping because have several features rapid, ease to perform, an inexpensive, and accurate method (Fonseca *et al*, 2013).

This methodis ARMS-PCRmodification; four primers are used. Two inner primers were allele specific and lead to produce two bands are different in size (lower molecular weight), this band appears depend on wild or mutant allele is present. And two external or outer primers