

DETECTION OF THE HLA-DRB1 POLYMORPHISM AMONG RENAL FAILURE PATIENTS WITH AND WITHOUT CMV

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ABSTRACT : The human cytomegalovirus (HCMV) is an important human pathogen primarily affecting immunocompromised patients, like Renal failure patients, transplant recipients or HIV-infected individuals. Renal failure disease is a wide dissemination among kidney patients in Ba'quba City. The aim of the study was carried out to Molecular detection of CMV among 20 renal failure patients and detection of several single nucleotide polymorphisms (SNP) in *HLA-DRB1* among 20 patient suffering from acute or chronic renal failure whom admitted to Ibn Sina Center for kidney Dialysis in Baquba Teaching Hospital. This study was conducted for the period from 1/12/2019 to 15/6/2020 in Baquba city in Iraq, with age ranged between (13-76) years. The samples were diagnosed by molecular and genetics tests. Detection of human cytomegalovirus DNA in serum between patients with renal failure and control by using sensitive molecular techniques, the obtained results showed that the HCMV DNA was detected in (6 out of 45) or 6 % in patients, while in control group (0 out of 5) or 0.0%. Also, the HCMV DNA was detected in males 1(16.66) %. while in females was 5(83.34) %, while in control group (0 out of 5) or 0.0% with highly percent differences was noticing among both sexes. These results showed the age group 60-70 showed the highest rate of infection among other groups. The alignment results of the 237 bp samples revealed the presence of tow genetic variations variably distributed in some of the analyzed samples in comparison with the referring *HLA-DRB1* genetic sequence.

Key words : CMV, renal failure, HLA-DRB1, genotype.

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INTRODUCTION

Renal failure occurs when the kidneys are unable to do their job: to filter wastes from the blood, help regulate blood pressure, and regulate salt and water balances in the body. As blood flows through the kidneys, it is filtered, and wastes are removed and sent to the bladder as urine. If kidney function becomes impaired, acute (rapid) or chronic (gradually developing) renal failure may occur. With acute renal failure, kidney function can return to normal if the underlying cause of the failure is discovered and successfully treated. There are two type of kidney infection: Acute Renal Failure (ARF) and Chronic Renal Failure (CRF) (Tejal *et al*, 2010). Human Cytomegalovirus (CMV) is a ubiquitous humanspecific. DNA virus, belonging to the Herpesviridae family. Cytomegalovirus (CMV) is a ubiquitous virus with high worldwide prevalence ranging from 34%-80% in

developed countries to 100% in some parts of Africa (Cavlek *et al*, 2015). Human cytomegalovirus (HCMV) belongs to the herpesviridae family, subfamily Betaherpesvirinae, genus *Cytomegalovirus* and characterized by slow replication and clinically causes asymptomatic infection in immunocompetent individuals (Salman *et al*, 2014). The virus is the most significant infectious cause of congenital disease, an important opportunist in the immunocompromised host like renal failure. Cytomegalovirus (CMV) is a member of the human herpesvirus family.

Herpesviruses are enveloped viruses with an icosahedral capsid that encloses a double-stranded DNA genome, CMV is the largest member of the human herpesvirus family, with a genome of 236 kbp and more than 200 open reading frames (ORFs) encoding more than 80 viral proteins, including glycoproteins (e.g., gB),