

Republic of Iraq  
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# **Innate Immune Response Associated with Urinary Tract Infection Diabetes in Al-Muthanna Province**

A Thesis Submitted in Partial Fulfillment of the Requirement for the  
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## Abstract

The present study aimed to decide the most causative bacterial pathogen and investigate the innate immune changes in diabetic type II patients. A total of 60 patients and 22 controls were involved, urine and blood samples were collected from diabetic subjects and controls, during the period from November 2017 to March 2018. Serum samples were collected and stored for immunological tests. Data were obtained from urine samples culture to achieve the determining of the cause of etiology of UTI to set prevalence of UTI that spread among diabetics. So far; the most common isolated bacterial pathogens were *Escherichia coli*, *Enterobacter aerogenes*, *Klebsiella pneumonia*, *Proteus mirabilis*, *Staphylococcus aureus*, *Enterococcus fecalis* and *Pseudomonas aeruginosa*. Patients with T2DM are considered as immunosuppressed because they are at risk of infections. Neutrophils are one of the most important phagocytic cells and have important role in innate immunity. Detect the type of suppression in circulating neutrophils function in T2DM blood, either resultant from endogenous or exogenous factor. Evaluation of neutrophils activity was accomplished for both patients and controls by testing the abilities of circulating neutrophils in blood samples to engulf and reduce NBT dye. IL-8, C<sub>5</sub> and C<sub>3</sub> ELISA test were used to estimate this immunological parameters levels in patients and controls. Results showed significant decrease in phagocytic activity for patients mean levels were (15.03) and control mean levels were (49.18), and IL-8 mean levels for patients were (558.44) and for controls (866.14), C<sub>5</sub> mean levels for patients were (1243.71) and for controls were (1686.20), whereas mean levels were (517.37) for controls were (497.29) C<sub>3</sub> was increase insignificantly. T2DM patients suffering from innate immunodeficiency represented by diminished function of phagocytosis process and complement system elements levels indicating for several resulting represented by recurrent UTI.