# Serum Insulin, C.Peptide And Serum Pro-Insulin In Pre And Post Renal Transplantation

#### Thesis

Submitted for Partial Fulfillment of Master Degree in Internal Medicine

#### Ву

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#### List of Abbreviations

#### Abb. Full term ABMR ...... Acute antibody-mediated rejection ADA ...... American Diabetes Association ADMA...... Asymmetric dimethyl arginine AZA ..... Azathioprine BMI..... Body mass index CKD ...... Chronic kidney disease CMV...... Cytomegallo virus CNIs...... Calcineurin inhibitors CRF..... Chronic renal failure CsA...... Cyclosporine A CVA..... Cerebrovascular accident CVD ...... Cardiovascular disease DIRECT...... Diabetes Incidence after renal transplantation: Neoral Monitoring Versus Tacrolimus DM ...... Diabetes mellitus eGFR..... Estimated GFR ELISA..... Enzyme-linked immunosorbent assay EPO..... Erythropoietin ESRD ..... End-stage renal disease FDA..... Food and drug administration FSIVGTT ..... Frequently sampled intravenous glucose tolerance test GAD6 ...... Glutamic acid decarboxylase GDM ......Gestational diabetes mellitus GFR..... Glomerular filtration rate HCV .....hepatitis C virus HOMAIR..... Homeostatic model assessment of insulin resistance IGT..... Impaired glucose tolerance IRS..... Insulin resistance syndrome IVIG ...... Intravenous immunoglobulin KDIGO...... Kidney disease improving global outcomes

#### List of Abbreviations cont...

#### Abb. Full term KDOQI...... Kidney Disease Outcomes Quality Initiative MCR..... Metabolic clearance rate MMF ...... Mycophenolate mofetil MNT..... Medical nutrition therapy MPS ..... Mycophenolate sodium mTOR ...... Mammalian target of rapamycin MZB ...... Mizoribine NGT ...... Normal glucose tolerance NICE.......National Institute of Health and Clinical Excellence NIDDM ...... Non-insulin dependent diabetes mellitus NODAT ...... New onset diabetes after renal transplantation OGTT......Oral glucose tolerance test PTDM ...... Post transplant diabetes mellitus rATG......Rabbit antithymocyte globulin RRT..... Renal replacement therapy SNPs ...... Single nucleotide polymorphisms T2DM.....Type 2 diabetes mellitus T3.....Triiodothyronine TNF- $\alpha$ ...... Tumour necrosis factor alpha USRDS...... US Renal Data System WHO ...... World Health Organization

#### Introduction

n recent decades, diabetes mellitus has become a severe and growing global public health problem in developed and developing countries due to increase of its prevalence, morbidity and mortality.

Recent estimates by the World Health Organization (WHO) forecast a significant increase in number of individuals suffering from diabetes until the year 2030. Then the number of estimated diabetes suffering individuals constitutes a universe of nearly 366 million people (Marilia and Roberta, 2009).

New onset diabetes mellitus after transplantation (NODAT) is one of the complications that is increasingly occurring among kidney transplanted patient.

It's associated with risk of cardiovascular disease, graft failure and mortality (*Khong and Chong, 2014*).

The risk of NODAT development increases with time after transplantation, the incidence of NODAT ranges from approximately 2% to 25% with current immunosuppressive regimens, but rates as high as 46% were reported with earlier more diabetogenic regimens therefore early detection and prompt action are essential in reducing the risk of NODAT and its complications (*Wilkinson*, 2007).