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New onset diabetes post renal transplantation

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NEW ONSET DIABETES POST RENAL TRANSPLANTATION

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfillment of the requirements for the Degree of Master of Medicine in the branch of Internal Medicine.

Johannesburg, May 2008

DECLARATION

I, Pretissha Harrichund declare that this research report is my own work. It is being submitted for the degree of Master of Medicine in the branch of Internal Medicine in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

……(Signature of candidate)

…….day of……..(month), 2008…

DEDICATION

I would like to dedicate this work to my loving parents Sonny and Sheila Ragoonandhan, my wonderful husband Sunil and beautiful son Karan, and my parents-in-law Ranjith and Shariena Singh. I appreciate your love and support.

PUBLICATIONS AND PRESENTATIONS

Data from this research report has been presented at the SEMDSA Endocrinology Congress in Bloemfontein, June 2007. I will be submitting for publication shortly.

ABSTRACT

Diabetes mellitus is a major cause of morbidity and mortality and is the leading cause of end-stage renal disease worldwide. New onset diabetes post renal transplantation is associated with reduced graft function, decreased patient survival and increased risk of graft loss. The immunosuppressive regimes used and dosage of corticosteroid therapy appear to impact on the incidence of new onset diabetes post renal transplantation.

The objectives of this study were: to ascertain the prevalence of new onset diabetes post transplantation; to determine the association between new onset diabetes with immunosuppressive regimens and ethnicity; and to assess outcomes in terms of morbidity and mortality.

The study design consisted of a retrospective analysis of 398 patient files transplanted between 01/07/1994 and 30/06/2004. Information retrieved from the files consisted of patient demographics (age, race, gender), weight, date of onset of diabetes, immunosuppressive regimens used, infections, cardiovascular and overall morbidity and mortality. The diagnosis of diabetes was based on the American Diabetes Association (ADA) criteria or the requirement for anti-diabetic agents.

Results obtained showed that 15.58% (62/398) of patients became diabetic. The mean time to onset of diabetes was 22.9 months (range 1 week to 100 months). 20.21% Black patients (p=0.100), 9.42% White, 12.5% Coloured and 12% Indian patients became diabetic. Treatment with Cyclosporine(CyA) had an incidence of diabetes of 14.44%, Tacrolimus 20.25% p = 0.228, Rapamune 11.36% and Mycophenolate Mofetil 11.97%.

Infections occurred in 96.77% of diabetic patients, p = <0.0001. Cardiovascular morbidity and mortality was 11.29%, p = 0.82. Overall mortality was 79.3% in the diabetic group p = 0.237, HR 1.45.

In conclusion, the incidence of new onset diabetes is significant as it confers a higher risk of infections and overall mortality. Black patients are more affected, with an increased risk for those treated with Tacrolimus.

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