

## Post renal transplant diabetes

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### Introduction:

New onset diabetes after transplantation (NODAT) has been recognized as a common complication post renal transplantation. Early screening and management of NODAT are recommended to prevent complications of diabetes which may affect long term survival of the graft. Current evidence suggests risk factors that predispose to Type 2 Diabetes Mellitus in the general population could also predispose to NODAT. Specifically for transplantation, diabetogenic properties of immunosuppressive therapies have been described.

### Aims:

To identify incidence of NODAT in a single-centre, review its management and clinical outcomes (diabetes control).

### Methods:

We used our hospital renal database to identify all renal transplant recipients who were diagnosed with NODAT from 1 May 2017 – 30 August 2019. We then reviewed the electronic notes, results and clinic letters for the identified population to obtain information about their graft, date and method of diagnosis of NODAT, immunosuppression therapy, diabetes medication, HbA1c and if it had resolved.

### Results:

The incidence of patients diagnosed with diabetes post renal transplant was 19.8%. The average HbA1c at time of diagnosis was 51.1 mmol/mol. Diagnostic tests used included random glucose (21.7%), HbA1c (32.6%), both random glucose and HbA1c (39.1%) and Random glucose, HbA1c and Glucose Tolerance Test (2.2%). The tests for 2 patients were not known (4.3%).

23 patients (50%) were given dietary and lifestyle advice, 15 patients (32.6%) were on single oral antiglycaemic agents (either sulfonylurea, biguanide or dipeptidyl peptidase-4 inhibitors), 1 patient (2.2%) was on a combination of 2 antiglycaemic agents, 5 patients (10.9%) were on insulin therapy and 2 patients (4.3%) were on combination of oral antiglycaemics and insulin. Five patients received care from a diabetologist, 2 from diabetic specialist nurses, 1 from community diabetes team, and 6 in primary care. For the remaining 32 patients, the nominated team for diabetes care was not specified, but under review of the renal transplant team.

21 patients were still on treatment; 13 were managed with lifestyle and dietary advice, 9 no longer had diabetes and were off treatment. 2 patients had died and another had his care transferred to a different centre (hence outcome was not known).

### Conclusion:

Our centre's incidence rate of NODAT appears to be consistent with the literature. The study identified varied regimens of management for NODAT. We need to review the use of HbA1c alone in diagnosis of NODAT as there may be other confounding factors affecting HbA1c levels in the early transplant period. 22 (47.8%) of the patients did not require pharmacological treatment and 9 of these patients had resolution of diabetes. Key management strategies identified are early diagnosis of NODAT, using glucose tolerance tests, review of immunosuppression therapy and regularly diabetes review to ensure improvement in their

diabetes control, and hopefully resolution. We are not a steroid-free centre but are reviewing considering steroid-free immunosuppression, especially in groups of patients with risk factors for developing diabetes.