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Incidence of New Onset Diabetes after Renal Transplant and associated risk factors

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Objectives: The aim of study was to calculate the incidence of New Onset Diabetes after renal transplant (NODAT) and associated risk factors

Methods: It was prospective study and was conducted in the department of Nephrology, Bahria International Hospital Lahore, Pakistan. The patients undergoing renal transplantation from April 2016 to April 2018 were included and followed up till 12 months from time of transplantation. Patients with the previous history of diabetes, follow up period less than 12 months and missing information were excluded from the study. NODAT was diagnosed according to American Diabetes Association Criteria with fasting plasma glucose > 120 mg/dl or random plasma glucose > 180 mg/dl. The Patients were divided in to two groups; with and without NODAT – for the statistical comparison.

Results: The study included 115 patients; of these 101 were males and 14 females and the mean age was 37.0±10.8 years. During the one year period, 28 (24.35%) patients developed NODAT. The mean time of onset was 5.3±3.6 months. On comparison for both groups, the positive family history was significant in NODATs with 46.4% as compared to only 5.7% in non- NODAT group. All the patients with more than three HLA mismatches developed diabetes with significant p-value <0.001. The fasting glucose levels before transplant for NODATs was 96.6±15.4 mg/dl, which was significantly higher than Non-NODATs, who had average of 80.5±12.2 mg/dl.

Conclusions: The incidence of NODAT was 24.3%. The pre-transplant FPG, family history of diabetes, increased HLA mismatches and Hepatitis C infection were the major risk factors.

Table 1 (Time duration for Onset of DM-Post transplant)

Table.1 Time duration for onset of diabetes, post-transplant

Time (months)	n	%
≤ 2.00	6	21.4
2.01 - 4.00	6	21.4
4.01 - 6.00	7	25.0
6.01 - 8.00	2	7.1
8.01 - 10.00	2	7.1
10.01+	5	17.9

Table 2 (Comparison of risk factors between NODAT & Non NODAT)

Table.2 Comparison of various risk factors between NODAT and Non-NODAT

		Group				P-value
		NODAT (n = 28)		Non-NODAT (n = 87)		
		n	%	n	%	
Gender	Male	27	96.4	74	85.1	0.075
	Female	1	3.6	13	14.9	
Family History	Yes	13	46.4	5	5.7	< 0.001
	No	15	53.6	82	94.3	
HLA Mismatch	None	2	7.1	4	4.6	< 0.001
	Two	0	0.0	10	11.5	
	Three	14	50.0	73	83.9	
	Four	8	28.6	0	0.0	
	Five	4	14.3	0	0.0	
Hepatitis Status	Positive	10	35.7	6	6.9	< 0.001
	Negative	18	64.3	81	93.1	
CMV Status	Positive	1	3.6	0	0.0	0.091
	Negative	27	96.4	87	100.0	
Immunosuppressant	Cyc	1	3.6	16	18.4	0.031
	Tac	27	96.4	71	81.6	