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THE CORRELATION OF HbA1c WITH SUSPECTED URINARY TRACT INFECTION IN TYPE 2 DIABETES MELITUS PATIENTS WITH NEPHROPATHY COMPLICATIONS

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Objectives: Diabetes is the world's biggest health problem. Many patients come with diabetic nephropathy complications. One of the major disease burdens for these patients is urinary tract infection. Monitoring tools for this condition is very essentials. Hemoglobin A1c (HbA1c) has become the standard tool for monitoring glycemic control in patients with diabetes. This study aims to investigate the correlation of HbA1c with UTI in diabetes mellitus patients with nephropathy complications

Methods: This study was an observational study with a cross-sectional design in 37 patients who had been diagnosed with diabetes mellitus with nephropathy complications. The study was conducted at Dr. Sardjito General Hospital Yogyakarta from September-November 2018. Blood samples were examined for HbA1c parameters using Adams Lite, and urine samples are examined by urinalysis using Arkray and Sysmex UF-500i. Samples were divided into 3 groups based on HbA1c levels (≥6.5 % for the diabetes group, 5.7-6.4% for prediabetes group, and <5.7% for normal group. Urinary tract infection was diagnosed based on urinalysis results. Pearson correlation was used to assess the correlations.

Results: The significant difference between HbA1c and abnormal urinalysis results was found between study groups on HbA1c ≥ 6.5% (diabetes), HbA1c 5.7-6.4% (prediabetes) and < 5.7% (normal). HbA1c level had a significant positive correlation with possible urinary tract infection events in all study subject groups (r=0.5853; p=0.0001).

Conclusions: HbA1c level has a significant correlation with urinary tract infection incidence in all study groups. Control of HbA1c levels in Diabetes Mellitus patients with nephropathy complications can reduce the incidence of urinary tract infection.