

Comparison of serum folic acid and Vitamin B12 among type 2 diabetes mellitus patients with and without nephropathy; a cross sectional observational study from eastern India

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Abstract

Background & aims: Diabetic nephropathy is the leading cause of chronic kidney disease and end-stage renal disease. According to earlier studies serum folic acid and vitamin B12 were found to be reduced in such patients. Therefore, the present study was conducted to estimate and compare the serum folic acid and vitamin B12 values of diabetic mellitus patients with and without nephropathy. **Materials and methods:** A single institution based cross sectional study was conducted in Kolkata from March 2018 to September 2019. 203 adult with at least five years history of type 2 diabetes mellitus were subdivided into two groups' nephropathy and non-nephropathy. The cut off value for inclusion into nephropathy group was urinary albumin-creatinine ratio of more than equal to 30gm/dl. Serum folic acid and vitamin B12 values of both groups were estimated by Chemiluminescence assay and later statistically compared for result. **Result:** Overall 127 patients were grouped in non-nephropathy while rest 76 belonged to nephropathy. Both folic acid (4.68 ± 3.64 versus 7.02 ± 3.89 ; $p < 0.0001$) and Vitamin B 12 (219.54 ± 56.53 versus 343.98 ± 32.1 ; $p < 0.0001$) values were found to significantly lower in the nephropathy group. Non-nephropathy patients also displayed better glycemic profile in terms of HbA1c. **Conclusion:** Patients with diabetic nephropathy displayed lower levels of serum folic acid as well as vitamin B12 in comparison to the patients who did not develop nephropathy. Besides renal parameters the glycemic statuses of nephropathy patients were also poor.

Keywords: Diabetic nephropathy, folic acid, Vitamin B12, urinary albumin –creatinine raio, Chemiluminescence assay.