

## Relationship of homocysteine with gender, blood pressure, body mass index, hemoglobin A1C and the duration of diabetes mellitus type 2

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**Statement of the problem:** Homocysteine (hcy) is a naturally occurring amino acid in the body that has emerged as a novel risk factor for causing macro-vascular and microvascular complications in patients with Diabetes Mellitus(DM). Studies done in the developed countries have shown that higher levels of homocysteine is directly or indirectly related to the micro- and macro-vascular complications of DM like CVD, stroke, nephropathy, neuropathy and retinopathy. However, in a country like ours, having the third higher population of diabetic patients of the world, the literature regarding this topic is scarce. Therefore, the purpose of our study was to find out the association of serum Hcy levels with DM, duration of DM, HbA1c levels and other risk factors especially obesity.

**Methodology & Theoretical Orientation:** A prospective observational study was conducted at Hayatabad Medical Complex in Peshawar, Pakistan, in the department of endocrinology from June 2020 to June 2021. Blood samples were taken from the selected diabetic patients according to the exclusion and inclusion criteria and serum Hcy was determined by chemiluminescent microparticle immunoassay.

**Findings:** The study showed higher levels of plasma homocysteine in patients with DMT2 and the levels were even higher in patients with poor glycemic control and hence having higher levels of HbA1c. This study also showed higher levels of plasma homocysteine in female diabetic patients, patients having longer duration of DMT2 and those having associated hypertension.

**Conclusion and significance:** Patients having poorly controlled DMT2 or those with the duration of DMT2 of more than five years must be regularly screened for hyperhomocysteinemia although the importance of other important risk factors like Hypertension must not be overlooked. Recommendations are made for large-scale and multi-center studies to be conducted in order to determine the validity of these findings.

### Biography

The author graduated in 1998 had fellowship in medicine in 2004. He has special interest in diabetes mellitus and stroke. He is the regional counsellor Pakistan society of physicians. He is also the associate dean post graduate training.