# Letters to the Editor

*[The Editor is not responsible for the views expressed by the correspondents]*

## Correlation of B-type Natriuretic Peptide and HbA1c in Heart Failure

Sir, — Recently I read the article titled "Study of the Prevalence of Type 2 Diabetes Mellitus in Patients with Heart Failure in a Tertiary Care Hospital in Eastern India" published in Volume 121, No.4, April 2023 of Journal of Indian Medical Association. I congratulate the authors for the research work done. Heart Failure (HF) is one of the emerging health problems not only in India but globally as well. The prevalence of Type 2 Diabetes Mellitus (T2DM) is also increasing at an alarming rate. Both these conditions may coexist with T2DM being a risk factor for HF and vice versa. Various studies (Kaiser Permanent, Danish nationwide cohort study, CHARM program, EMPHASIS-HF trial) have been conducted and have found that the incidence of T2DM was higher in HF when followed up over a period of 3 to 5 years. The study has reported prevalence of prediabetes, Diabetes and their association with ejection fraction. It would have been better if information regarding duration and age at onset of heart failure, T2DM in this study was reported.

**Diagnostic test for Heart Failure and Type 2 Diabetes Mellitus :** B-type Natriuretic Peptide (BNP) levels are increased in heart failure. Glycated hemoglobin or $HbA_1c$ levels indicates the glycemic control and is one of the diagnostic criteria for diagnosis of Diabetes Mellitus according to the American Diabetes Association guidelines. HbA1c may be a predictor of mortality in both T2DM and HF as per GISSI-HF study. It has also been shown that glycemic control affects BNP levels. Increased BNP levels may be caused due to poor glycemic control. The exact mechanism of relationship between hyperglycemia and BNP is not understood. It has been postulated that plasma glucose may induce cardiac myocytes which in turn leads to secretion of BNP. Hence, in HF patients with increased BNP levels, plasma glucose and $HbA_1c$ should be evaluated[3]. However, in a multiple regression analysis study, the authors Inoue Y, *et al* have found no correlation between $HbA_1c$ and HF. They also did a multivariate analysis which showed that BNP levels improve insulin resistance and in fact decrease the progression of DM. Since obesity is implicated in development of insulin resistance, relation of Body Mass Index (BMI) to BNP levels was studied and it was found to be inversely correlated[4].

Evaluation and correlation of BNP and $HbA_1c$ would have been beneficial to understand the utility of these investigations for screening and management of heart failure and T2DM.

### References


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Department of Biochemistry **Lalna R Takale**[1]
Bharati Vidyapeeth **Meghana K Padwal**[2]
Deemed to be University Medical College, Pune, Maharashtra
[1]MD, Associate Professor
[2]MD (Biochemistry), Professor and Head