Prevalence of thiamine deficiency in a stable heart failure outpatient cohort on standard loop diuretic therapy.

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BACKGROUND & AIMS: The prevalence of thiamine deficiency in heart failure (HF) patients has been reported to be as high as 50% in outpatient settings and has been found to be as high as 96% in the inpatient setting. Results from previous studies, however, have been inconsistent and further investigation is needed to clarify the true prevalence of thiamine deficiency in patients with chronic HF. The aim of this study was to determine the prevalence of thiamine deficiency in a random sample of stable HF outpatients receiving standard of care loop diuretic therapy.

METHODS: A cross-sectional study was conducted in 30 HF patients scheduled for regular follow-up visits in the Mayo Heart Failure Clinic. Whole-blood thiamine diphosphate was measured using high-performance liquid chromatography. Additional clinical and demographic features were collected through review of electronic medical records.

RESULTS: The estimated prevalence of thiamine deficiency in stable HF patients was calculated to be <11.6%. There was no correlation between diuretic dose and thiamine levels (r = 0.02, P = 0.93) and there was no correlation found between left-ventricular ejection fraction (LVEF) and thiamine levels (r = 0.147, p = 0.44).

CONCLUSION: Our findings suggest that the prevalence of thiamine deficiency, based on standard normal values, in a stable outpatient HF cohort on standard loop diuretic therapy is very low. Previous work has demonstrated improvements in myocardial function with high-dose thiamine supplementation regardless of thiamine blood levels, however, suggesting that thiamine may become conditionally essential with HF. Therefore, we suggest that a disease-specific reference range be determined to accurately identify HF patients that would benefit from thiamine supplementation.

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