Abstract


Prevalence of clinical thiamine deficiency in individuals with medically complicated obesity.

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OBJECTIVE: Thiamine is a vitamin whose deficient can result in multiorgan symptoms. We described an 18% prevalence of clinical thiamine deficiency after gastric bypass surgery. Our hypotheses are that individuals with medically complicated obesity frequently have clinical thiamine deficiency and that diabetes mellitus is a mechanism for development of clinical thiamine deficiency.

METHODS: This is a single institution, retrospective observational study of consecutive patients with a body mass index of at least 35 kg/m² who were evaluated in preoperative gastrointestinal bariatric clinic from 2013 to 2015. Each patient underwent a symptom survey. Clinical thiamine deficiency is defined by both (1) consistent clinical symptom and (2) either a low whole-blood thiamine concentration or significant improvement of or resolution of consistent clinical symptoms after receiving thiamine supplementation. After excluding 101 individuals with prior bariatric surgery or heavy alcohol consumption, 400 patients were included in the study.

RESULTS: Sixty-six patients (16.5% of 400) fulfill a diagnosis of clinical thiamine deficiency, with 9 (14% of 66) having consistent gastrointestinal manifestations, 46 (70% of 66) having cardiac manifestations, 39 (59% of 66) having peripheral neurologic manifestations, and 3 (5% of 66) having neuropsychiatric manifestations. Diabetes mellitus is not a risk factor (P=.59). Higher body mass index is a significant risk for clinical thiamine deficiency (P=.007).

CONCLUSION: Clinical thiamine deficiency is common in these individuals and a higher body mass index is an identified risk factor. Mechanisms explaining development of thiamine deficiency in obese individuals remain unclear.

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