

## **Risk of thiamine deficiency and Wernicke's encephalopathy after gastrointestinal surgery for cancer.**

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**Background:** Cancer patients submitted to gastrointestinal surgery are at risk of thiamine deficiency (TD) and Wernicke's encephalopathy (WE). Although permanent neurological damage and death could be prevented by a timely replacement therapy, they often remain undiagnosed and untreated. We hypothesized that WE remains unrecognized because most cases may manifest several months after hospital discharge.

**Methods:** WE frequency was investigated in a sample of cancer patients who underwent gastrointestinal surgery, by using the diagnostic criteria proposed to improve diagnosis among alcoholics. Patients were evaluated at discharge through the examination of medical records and 6 months after by telephonic interview.

**Results:** Forty-five patients were selected. Signs of WE resulted in 4.4 % at discharge. At 6 months, 21 patients were interviewed. Among them, 90.4 % had signs of WE. The number of affected patients was significantly higher 6 months after discharge than at discharge (90.4 vs 9.5 %,  $p < 0.0001$ ).

**Conclusions:** Further studies with larger samples are needed to establish the prevalence of TD and related WE in cancer patients after gastrointestinal surgery. This study suggests that the problem is understated. Even in the absence of symptoms of TD, the use of prophylactic thiamine supplementation should be taken into consideration, as consequences of misdiagnosis can be severe.

### **Strengths of Study**

This study was not industry funded and examines a serious problem which has not been extensively studied and which warrants further investigation.

### **Weaknesses of study**

The authors recognize the sample size is limited and they were unable to differentiate if symptoms were due to WE or other causes. Other confirmatory tests (eg thiamine levels or MRI) also have limitations. The study is retrospective and selection biases were detected. The study was conducted in Italy and may not be generalizable to a Canadian population.

### **Relevance to palliative care.**

Many of the patients admitted to the TPCU have gastrointestinal cancers which have been treated, in part by surgery. It may be useful, when examining causes of cognitive impairment in this population, to consider the possibility of thiamine deficiency. Administration of thiamine is inexpensive and well-tolerated so could be given even if the cause of cognitive impairment is not clear, as suggested in the authors' conclusions.