

HOW TO IDENTIFY THIAMINE DEFICIENCY

Produced by Kyowa Kirin as a service to medicine

Prescribing information can be found on the Drink Talking Portal

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Alcohol-related thiamine deficiency can be difficult to spot

Potential questions to consider asking your patients:

How often do you cook or eat a hot nutritious meal?

How often do you drink alcohol instead of eating a nutritious meal?

When was the last time you didn't drink for two consecutive days/one week?

Have you had any problems with recalling events recently?

Do you ever miss appointments?

Do you know what day of the week it is?

Talk me through what you were doing before you had this accident and hurt your....

The signs of thiamine deficiency¹

Early signs

- Loss of appetite
- Nausea/vomiting
- Fatigue, weakness, apathy
- Giddiness, diplopia
- Insomnia, anxiety, difficulty in concentration
- Memory loss

The signs of thiamine deficiency¹

Late signs

- One or more of the classic triad of signs (ataxia, eye signs, mental signs)
- Quiet global confusion with disorientation in time/place
- Confabulation/hallucinations
- Onset of coma

Identifying patients at risk of Wernicke's encephalopathy²

- Thiamine deficiency puts patients at risk of developing Wernicke's encephalopathy
- Wernicke's encephalopathy is difficult to diagnose because the classic triad of signs (ophthalmoplegia, ataxia, and changes in mental status) occurs in around only 10-16% of patients
- Symptoms may also appear similar to the effects of acute alcohol intoxication or be mistaken for other neurological disorders or head trauma

Identifying patients at risk of Wernicke's encephalopathy

Caine's Criteria

- Approximately **85%** of Wernicke's encephalopathy is diagnosed when using Caine's criteria^{3,4}
- Using Caine's criteria, a patient must demonstrate any two of the following four signs:^{2,4}

1

Dietary deficiencies

e.g. significant weight loss over a short period of time, poor diet, or evidence of malnourishment

2

Eye signs

Ophthalmoplegia, nystagmus or gaze palsy

3

Cerebellar dysfunction

Ataxia, abnormal past pointing or dysdiadochokinesia

4

Altered mental state or mild memory impairment

e.g. disorientation, confusion

How thiamine deficient are patients?

It may not be clear how thiamine deficient a patient is on admission so early identification is vital.



4 days

Changes in glial cells within the CNS

7-10 days

Abnormalities in intracellular environment, cell damage and BBB breakdown

14 days onwards

DNA fragmentation, neuronal necrosis; irreversible structural lesions in specific brain regions

References

1. Thompson AD, et al. *Pract Gastroenterol*. 2009; 33 (6): 21-30.
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3. Galvin R, et al. *Eur J Neurol* 2010; 17 (12): 1408-1418.
4. Caine D, et al. *Neurol Neurosurg Psychiatry* 1997; 62 (1): 51-6.