

IV Pabrinex and Oral Thiamine Replacement in Critical Care

Thiamine is an essential vitamin used in metabolism of carbohydrate, fats and amino acids. A deficiency leads to impaired oxidative metabolism, a decreased level of adenosine triphosphate and decreased cellular energy production. The most clinically relevant manifestation of this is Wernicke's encephalopathy (WE) which is a component feature of alcohol related brain damage (ARBD) along with Korsakoff's dementia.

Malnourished patients are also at risk of harm due to low stores and replenishment of stores will aid in cellular energy production and metabolic pathways.

Alcohol Related Brain Damage

Suspected ARBD

History of regular high alcohol use AND any clinical features of Wernicke's (WE) (encephalopathy, ataxia, ophthalmoplegia, nystagmus, new confessional state).

If reduced GCS likely due to other cause but concurrent high alcohol use and unable to assess for other features of WE, suspect possible ARBD.

YES

Prescribe IV Pabrinex 2 Pairs (STAT dose only)

Patients who recover consciousness without ongoing signs of WE IV therapy may not indicated. Convert to oral as below.

If ongoing features or continued low GCS with concurrent high alcohol use IV replacement.

Prescribe IV Pabrinex 2 Pairs 8hrly for a further 2 Doses.

After Maximum of 3 doses switch to oral Thiamine 100mg three times daily

If oral or NG route unavailable, then continue 1 pair once daily for 5 days or until enteral route is established.

If after initial 3 doses patient continues to show signs of WE continue IV Pabrinex 2 pairs for 3 times a day for 5 days then convert to oral Thiamine 100mg three times daily

Patient admitted within 3 weeks of recent IV Pabrinex course, after 1st STAT dose switch to oral Thiamine if asymptomatic and enteral route available, if not continue once daily Pabrinex for 5 days.

NO

If no features of WE then use oral Thiamine 100mg three times daily only.

Malnourishment and Re-feeding risk

Re-feeding syndrome can be precipitated as nutrition is re-introduced. Pabrinex and Thiamine as such play a vital role in preventing harm related to this.

Risks stratification and awareness from specific groups as below

- Eating Disorders.
- Prolonged periods of Starvation.
- High GI surgery with poor nutritional state (pancreatectomy, weight loss surgery)
- Recurrent Vomiting (e.g. Hyperemesis gravidarum)
- Chronic Disease (Crohns, AIDS)
- Severe hypomagnesaemia disorders
- Little to no food for >5 days
- Low BMI, particular risk if <16
- Unintentional weight loss 15% of body weight in last 3-6 months

Are the clinical features present?

- Hypokalaemia
- Hypomagnesaemia
- Hypophosphataemia
- Encephalopathy (Wernicke's)

YES

**Prescribe Pabrinex IV 2 pairs as STAT dose.
Continue Pabrinex IV 1 pair for 5 days OD.
No additional need thereafter**

OR:

Oral Thiamine 100mg Three times daily for 10 days AND Forceval Capsules once daily for 10 days

Re-feeding high risk management:

- Ensure Dietician team aware.
- Monitor U&E, Mg, Ca and PO₄ prior to feeding and daily until stable.
- Commence correction of electrolyte deficits prior to feeding, if possible, see Phosphate replacement guideline. You do not need to delay feeding as long as correction of deficits has started.
- Monitor blood glucose and ketones.
- Monitor fluid balance closely, use of the MUST tool, food history charts and a weight history will help with this assessment.

**Critical Care Guidelines
FOR CRITICAL CARE USE ONLY**

Korsakoff's Dementia

This is an end stage of ARBD and will not be improved by the supplementation of Thiamine. No indication for treatment.

If there is uncertainty, then treat as WE.

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