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**Title:** NHS Grampian (Acute Sector) Guidance for the prescribing of vitamin and mineral supplements for hospitalised patients with a history of excess alcohol consumption

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**Document application:** NHS Grampian (Acute Sector)

**Purpose/description:** This guidance provides information on the use of parenteral vitamin supplementation for hospitalised patients within the acute sector with a history of alcohol excess. The guidance includes recommended dosing schedules for parenteral administration of Pabrinex® (ascorbic acid, anhydrous glucose, nicotinamide, pyridoxine hydrochloride, riboflavin, thiamine hydrochloride) in the treatment of Wernicke-Korsakoff syndrome and also for prophylaxis in “at risk” patients. This guidance provides information on the prescribing of vitamin and mineral supplements for patients with decompensated liver disease.
Group/Individual responsible for this document: Clinical Pharmacist

Policy statement: It is the responsibility of supervisory staff at all levels to ensure that their staff are working to the most up to date and relevant policies, protocols procedures. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions which may affect patient, staff or visitor safety and comfort will be reduced.

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NHS Grampian (Acute Sector) Guidance For The Prescribing Of Vitamin And Mineral Supplements For Hospitalised Patients With A History Of Excess Alcohol Consumption

Introduction

Micronutrient deficiencies are common in people with a history of chronic alcohol consumption. This can be due to a decrease in absorption, storage capacity and/or metabolism of vitamins into their active forms.

Thiamine Supplementation in Wernicke-Korsakoff Syndrome.

Wernicke-Korsakoff Syndrome is a relatively common condition seen in patients with a history of chronic alcohol consumption resulting from thiamine deficiency. It is known to cause significant morbidity and mortality and untreated will cause irreversible brain damage and progress steadily to death. Early recognition of symptoms and treatment is vital as symptoms may be controlled and progression of the syndrome can be slowed or halted.

Thiamine has been established as the treatment of choice for over 50 years, however, there is uncertainty about appropriate dosage, frequency, duration or route of administration due to lack of randomised controlled trials. Current practice guidelines are based on case reports and clinical experience. As classic signs of Wernicke’s Encephalopathy may occur in only 10% of patients a presumptive diagnosis should be made for all patients with a history of alcohol excess and/or current intoxication with one or more of the following otherwise unexplained symptoms:

- Confusion
- Delirium
- Ataxia, especially truncal ataxia
- Ophthalmplegia
- Nystagmus
- Memory disturbance
- Hypothermia and hypotension
- Coma/unconsciousness.

Treatment of acute Wernicke-Korsakoff syndrome

Immediate treatment with Intravenous thiamine supplementation is required for people with suspected Wernicke’s Encephalopathy. The first choice of treatment is Pabrinex® Intravenous High Potency (IVHP) 5mL ampoules 1 and 2 (ascorbic acid
500mg, anhydrous glucose 1g, nicotinamide 160mg, pyridoxine hydrochloride 50mg, riboflavin 4mg, thiamine hydrochloride 250mg).

The contents of two pairs of Pabrinex® IVHP 5mL ampoules should be administered three times daily for two days. If there is no clinical response after two days (six doses), treatment should be discontinued. If clinical improvement is seen the contents of one pair of 5mL Pabrinex® IVHP ampoules should then be administered three times daily for a further three days or for as long as clinical improvement continues.

**Anaphylaxis** is a rare complication of Pabrinex® administration that may occur during or shortly after parenteral administration. It is more likely to occur with the intravenous route than the intramuscular route. It is recommended that parenteral administration is restricted to patients in whom it is essential.

For intravenous administration one to two 5mL pairs of Pabrinex® IVHP (ampoules 1 and 2) must be mixed and diluted with 50-100mL sodium chloride 0.9% or glucose 5% and infused over 30 minutes. The patient should be observed for signs of anaphylaxis throughout the infusion where suitable facilities with epinephrine (adrenaline) 1 in 1000 (1mg in 1mL) for intramuscular administration are readily available.

**Repeated injections of preparations containing high concentrations of thiamine may give rise to anaphylactic shock.** Mild allergic reactions such as sneezing or mild asthma are warning signs that further injections may give rise to anaphylactic shock.

Pabrinex® is also available as an Intramuscular High Potency Injection. The intravenous and intramuscular formulations are not interchangeable. The intramuscular preparation may be prescribed if intravenous administration is not suitable or unavailable. Please refer to the Pabrinex® Intramuscular High Potency Injection Summary of Product Characteristics for details on dosage and method of administration.

Following the initial five day intravenous treatment, oral supplementation should begin with thiamine 100mg three times daily. This should be reviewed prior to discharge. If the patient is at risk of malnutrition and continues to consume alcohol then treatment with oral thiamine 100mg three times daily should be taken indefinitely. Patients who remain abstinent from alcohol and have a well balanced diet should continue oral thiamine 100mg three times daily for up to three months. A longer duration of treatment may be justified in some circumstances and should be reviewed by the patient’s General Practitioner (see Appendix 1 for flowchart).
Prophylactic treatment for patients at high risk of Wernicke-Korsakoff syndrome

Patients at high risk of Wernicke-Korsakoff syndrome are those who drink alcohol to excess, especially those who consume greater than 20 units per day, and may have symptoms/signs of:

- Diarrhoea
- Nausea/vomiting
- Poor diet
- Weight loss or malnutrition
- Concerns regarding gastrointestinal absorption.

Treatment with intravenous thiamine is indicated for patients at high risk of Wernicke-Korsakoff syndrome. The contents of one pair of Pabrinex® IVHP 5mL ampoules should be administered three times daily for two days. Following the initial intravenous loading dose, oral supplementation should begin with thiamine 100mg three times daily. This should be reviewed prior to discharge. If the patient is at risk of malnutrition and continues to consume alcohol then treatment with oral thiamine 100mg three times daily should be taken indefinitely. Patients who remain abstinent from alcohol and have a well balanced diet should continue oral thiamine 100mg three times daily for up to three months. A longer duration of treatment may be justified in some circumstances and should be reviewed by the patient’s General Practitioner (see Appendix 1 for flowchart).

Prophylactic treatment for patients at low risk of Wernicke-Korsakoff syndrome

Patients who are at low risk of developing Wernicke-Korsakoff syndrome are those who have a history of excess alcohol consumption with recent alcohol intake (in the last three weeks) and not exhibiting any signs or symptoms as discussed above. Treatment with oral thiamine is indicated for these patients.

Oral supplementation should be prescribed as thiamine 100mg three times daily. This should be reviewed prior to discharge. If the patient is at risk of malnutrition and they continue to consume alcohol then treatment with oral thiamine 100mg three times daily should be taken indefinitely. Patients who remain abstinent from alcohol and have a well balanced diet should continue oral thiamine 100mg three times daily for up to three months. A longer duration of treatment may be justified in some circumstances and should be reviewed by the patient’s General Practitioner (see Appendix 1 for flowchart).

Vitamin and mineral supplementation in patients with decompensated liver disease

Patients with decompensated liver disease with signs of malnourishment or a Malnutrition Universal Screening Tool score (MUST) ≥ 2 should be prescribed one Forceval® capsule once daily (one hour after a main meal) or an equivalent balanced multivitamin and mineral supplement. Abidec® (0.6mL once daily) multivitamin drops may be prescribed for patients who have difficulty swallowing capsules and may be administered via an enteral feeding tube.
Signs of decompensated liver disease include encephalopathy, ascites, oedema, variceal bleeding and impaired synthetic function (low albumin, elevated bilirubin and prolonged prothrombin time).

**There is little evidence to substantiate the use of Vitamin B Compound Strong tablets for patients with decompensated liver disease with signs of malnourishment or MUST ≥ 2 or those with suspected Wernicke-Korsakoff syndrome and should therefore NOT be prescribed.**

### Refeeding syndrome

Patients who are at risk of refeeding syndrome should be monitored as per NHS Grampian Refeeding syndrome guideline and any biochemical abnormalities should be corrected. Detailed NHS Grampian guidelines for the treatment of hypokalaemia, hypocalcaemia and hypomagnesaemia are available on the intranet or pharmacy (01224 552316) may be contacted for advice.

### References

Baines M, Bligh JG, Madden JS. Tissue thiamin levels of hospitalised alcoholics before and after oral or parenteral vitamins. Alcohol & Alcoholism. 1988; 23(1):49-52


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National Institute for Health and Clinical Excellence (NICE), Alcohol-use disorders. Diagnosis and clinical management of alcohol-related physical conditions (CG100). June 2010

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Distribution list

All Acute Sector NHS Grampian Clinical Staff.
Appendix 1

Flowchart For The Prescribing Of Thiamine Supplementation For Prophylaxis And Treatment Of Wernicke-Korsakoff Syndrome

This flowchart should be used in conjunction with the accompanying guideline.

- Assess patient for signs and symptoms of Wernicke-Korsakoff Syndrome
  - Low risk
  - High risk
    - Administer ONE pair of Pabrinex® IVHP ampoules THREE times daily for 2 days
      - Sign(s) and symptoms of Wernicke-Korsakoff Syndrome present
        - Administer TWO pairs of Pabrinex® IVHP ampoules THREE times daily for 2 days
          - Clinical response?
            - Yes
              - Administer ONE pair of Pabrinex® IVHP ampoules THREE times daily for a further THREE days or for as long as improvement continues
            - No
              - Discontinue Pabrinex® IVHP supplementation
          - Discontinue Pabrinex® IVHP supplementation
    - Enteral route available?
      - Yes
        - Oral thiamine 100mg THREE times daily
        - Review at discharge
      - No
        - Administer ONE pair of Pabrinex® IVHP ampoules ONCE daily until enteral route available

- Is patient at risk of malnourishment and likely to continue to consume alcohol?
  - No
    - Oral thiamine 100mg three times daily for up to 3 months
  - Yes
    - Oral thiamine 100mg three times daily long term

IMPORTANT

- RISK OF ANAPHYLAXIS-Pabrinex® must only be administered where suitable facilities and epinephrine (adrenaline) 1 in 1000 (1mg/mL) for intramuscular injection is readily available.
- There are two formulations of Pabrinex® injection, one for IV and one for IM use. These are NOT interchangeable.
- To administer Pabrinex® IVHP ampoules, mix the contents of ampoule 1 and 2 with 50-100ml sodium chloride 0.9% and infuse over 30 minutes.