Folic acid

Newborn use only

2019

Alert	There is no folic acid in Penta-vite and Brauer Baby & Toddler Liquid Multivitamin, two commonly used multivitamin preparations in New South Wales. Human milk fortifiers contain folate and provide 44-64 microgram/kg/day of folate at 150 mL/kg/day of fortified human milk.
Indication	1. Prevention and treatment of folic acid deficiency including megaloblastic anaemia. 2. Nutritional treatment of anaemia when folic acid intake may be inadequate. 3. Supplementation following severe haemolysis – unclear evidence.
Action	Folate (Vitamin B9) is necessary for the synthesis of purines and thymine required for DNA formation. It is necessary for red cell maturation and promotion of cellular growth. The active form of folate is tetrahydrofolate [1, 2]. Supplemental folate is more bioavailable than folate normally present in food (85% versus 50%). Folinic acid is a metabolically active reduced form of folate that bypasses dihydrofolate reductase. Folate and folinic acid have a protective and probably similar effect against methotrexate related adverse effects in patients with inflammatory disease [3, 4]. As folinic acid is expensive, folate may be preferred.
Drug Type	Vitamin B9
Trade Name	Blackmores Folate Tablets; Foltabs Tablets; Megafol Tablets; Folic Acid Oral Solution; Folic Acid Injection Biological Therapies; Folic Acid Injection Phebra
Presentation	5 mg/mL 1 mL vial [Phebra] (each vial contains 34.5 mg/mL of sodium) 15 mg/mL 1 mL vial [Biological Therapies] (each vial contains 2.4 mg/mL of sodium) 0.05mg/mL (50microgram/mL) or 1 mg/mL oral solution can be prepared by pharmacy. 500 microgram Megafol tablet, 5mg Megafol tablet
Dosage/Interval	Enteral supplementation for very low birthweight infants* 50 micrograms/kg/day (Recommended Daily Intake: 35-100 micrograms/kg/day)[11] Treatment of folic acid deficiency: 100 microgram/day (<u>not</u> per kg) *Estimated enteral intakes based on 100 mL/kg human milk and 150 mL/kg fortified human milk are 8.5-16 and 44-64 microgram/kg/day respectively.[10]
Route	Oral
Maximum Daily Dose	
Preparation/Dilution	**Option 1 (using the vials for injection)** In-house pharmacy can prepare an oral solution using the vials for injection as follows: **Note: pH of solution needs be adjusted to 8-8.5 using sodium hydroxide. This can be done by adding WFI to approximately 90% of final volume, measure pH, adjust pH if necessary, then make to final volume.** 1mg/mL oral solution: Add 30 mg of folic acid to water for injection to make a final volume of 30 mL giving final concentration of 1 mg/mL. 0.05mg/mL (50microgram/mL) oral solution: Add 5 mg of folic acid to water for injection to make a final volume of 100 mL giving final concentration of 0.05mg/mL (50microgram/mL). **Option 2 (using tablets or powder)** In-house pharmacy can prepare a Syrspend SF PH4 formula using folic acid tablets or powder to prepare a 1mg/mL oral suspension: Add 30mg of folic acid powder to Syrspend SF PH4 to make a final volume of 30 mL giving final concentration of 1 mg/mL suspension.
Administration	PO: Administer orally with or without feeds
Monitoring	No specific monitoring required.

Contraindications	No information.
Precautions	No information.
Drug Interactions	Phenytoin: Concurrent use of folic acid and phenytoin may result in decreased folate concentrations and decreased phenytoin effectiveness. Phenobarbital (phenobarbitone): Folic acid may decrease phenobarbital (phenobarbitone) concentration and its therapeutic effect; monitor phenobarbital (phenobarbitone) concentration and clinical effect.
Adverse Reactions	Toxicity from over dosage is not reported in newborns. In preterm infants, high folate concentrations have been associated with low zinc [5]. Weight loss, neurological, gastrointestinal and psychological symptoms were also reported in adults on high doses [6].
Compatibility	Not applicable.
Incompatibility	Not applicable.
Stability	The compounded option using injections is stable for 30 days and the Syrspend PH4 formula is stable for 90 days. Refrigerate. Protect from light.
Storage	Refrigerate (2–8°C) oral solution prepared in-house. Tablets store below 25°C.
Special Comments	
Evidence summary	Refer to full version.
References	Refer to full version.

Original version Date: 15/11/2016	**Author: ANMF Group**
Current Version number: 2.0	**Version Date:** 17/06/2019
Risk Rating: Low	**Due for Review:** 17/06/2024

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