Acetylcysteine for mucolysis

Newborn use only

2020

Alert	Also known as N-acetylcysteine (NAC). Refer to acetylcysteine intravenous for paracetamol overdose. Safety data for acetylcysteine as a mucolytic agent in newborn infants is limited and the dosage recommendation was on the basis of consensus. Injection preparations are safe to use as oral preparation.
Indication	Meconium ileus secondary to cystic fibrosis Meconium-related ileus of preterm infants Distal intestinal obstruction secondary to cystic fibrosis Gastric or intestinal milk curd obstruction (lactobezoar)
Action	Reduces the viscosity of mucus by cleaving disulphide bonds in the mucoprotein
Drug type	Mucolytic agent
Trade name	DBL Acetylcysteine Injection Concentrate Acetadote Concentrated Injection (solution for infusion) Acetylcysteine-Link Concentrate for infusion
Presentation	DBL Acetylcysteine Injection Concentrate 20%; 200 mg/mL ampoule Acetadote Concentrated Injection (Solution for infusion) 20%; 200 mg/mL vial Acetylcysteine-Link Concentrate for infusion 20%; 200 mg/mL ampoule
Dosage	**Intragastric** Meconium ileus: 400 mg/dose (4 mL/dose of acetylcysteine 10%) (range 100–500 mg/dose, 1–5 mL/dose of acetylcysteine 10%) 6–8 hourly[5]. Acetylcysteine 10% = 100 mg/mL Distal intestinal obstruction secondary to CF in 1–3-month old: 400 mg/dose (8 mL of acetylcysteine 5% (50 mg/mL) daily[29]. Acetylcysteine 5% = 50 mg/mL **Rectal enema OR via distal intestinal stoma** 40–200 mg/dose of acetylcysteine 4% (1–5 mL of acetylcysteine 4%) 6–8 hourly. Acetylcysteine 4% = 40 mg/mL 50–100 mg/dose of acetylcysteine 1% (5–10 mL/kg of acetylcysteine 1%) 6–8 hourly has also been reported. Acetylcysteine 1% = 10 mg/mL
Dose adjustments – special scenarios	No information.
Maximum dose	400 mg/dose orally
Total cumulative dose	
Route	Oral via gastric tube Rectal Distal intestinal stoma or via T-tube ileostomy Irrigation through Replogle tube
Preparation	**Intragastric preparation[4,5]** Acetylcysteine 10%: Dilute 5 mL of acetylcysteine 20% (200 mg/mL) with 5 mL of glucose 5% or sodium chloride 0.9%* to make a final volume of 10 mL with a concentration of acetylcysteine 10% (100 mg/mL) *For Acetadote Concentrated Injection – use glucose 5% only **Rectal or stoma administration[22,23]** Acetylcysteine 4%: Dilute 1 mL of acetylcysteine 20% (200 mg/mL) with 4 mL of glucose 5% or sodium chloride 0.9%* to make a final volume of 5 mL with a concentration of acetylcysteine 4% (40 mg/mL) *For Acetadote Concentrated Injection – use glucose 5% only.
Administration	Intragastric/rectal/stoma: Administer slowly Irrigation via Replogle tube: As a continuous irrigation with suction applied
Monitoring	Cardiorespiratory, serum electrolytes, liver function
Contraindications	Hypersensitivity to acetylcysteine or any component of the preparation
Precautions	Do not use if intestinal perforation is suspected Abnormal liver and/or renal function Caution in asthma and bronchospasm Acetylcysteine is not compatible with rubber and some metals, particularly, iron, copper and nickel. Can be used with silicone and plastic.
Drug interactions	Glyceryl trinitrate: Increased risk of hypotension

Adverse reactions	Flushing, pruritus and urticarial reactions reported. Hypersensitivity reactions, vomiting, nausea, hypernatremia, hepatotoxicity, mucosal injury and haemorrhage.
Compatibility	Fluids: DBL Acetylcysteine Injection Concentrate and Acetylcysteine-Link Concentrate: Glucose 5%, sodium chloride 0.9% Acetadote Concentrated Injection: Glucose 5%
Incompatibility	Fluids: No information
Stability	Extemporaneously prepared solutions of 1% and 10% acetylcysteine diluted with sodium chloride 0.9% are stable for up to 60 days when stored in plastic amber bottles at room temperature.[24] Acetadote Concentrated Injection is stable for 24 hours at 2 to 8°C after dilution.
Storage	Injection: Store at room temperature. Protect from light.
Excipients	DBL Acetylcysteine Injection Concentrate and Acetylcysteine-Link Concentrate for infusion: Disodium edetate, sodium hydroxide, water for injections. Acetadote Concentrated Injection (solution for infusion): Water for injections and sodium hydroxide for pH adjustment.[26-28]
Special comments	Refer to full version.
Evidence	Refer to full version.
Practice points	Refer to full version.
References	Refer to full version.

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