

## CLINICAL POLICIES AND PROCEDURES

NEWBORN USE ONLY  
GIVEN ON DOCTORS ORDER ONLY

## NEOSTIGMINE

DESCRIPTION	Acetylcholinesterase inhibitor at neuromuscular junction, allowing accumulation of acetylcholine and restoration muscle activity.
USES	<p>1.Reversal of drug induced muscle paralysis</p> <p>2.Myasthenia gravis</p> <p>About 10-15% of the babies born to myasthenic mothers are affected by transient neonatal myasthenia due to transfer from the maternal circulation of antibodies directed against the acetylcholine receptors of the nerve-muscle junction. Symptoms present within 1-3 days and persist for 3-6 weeks. Symptoms persist for months in the other congenital recessively inherited forms of myasthenia, although they usually become less severe with time.</p>
PREPARATION	2.5mg/ml ampoule
DOSE	<p><b>1. Reversal of drug induced muscle paralysis</b> IV 50mcg/kg Neostigmine and 10mcg/kg Glycopyrronium with Atropine 15 mcg/kg.</p> <p><b>2. Myasthenia gravis</b> 150 mcg IM test dose 30min before feeding.</p> <p><i>Short-term management</i> 150mcg/kg 6-8 hourly is usually used for maintenance, but twice this dose may be necessary every 4 hours. (Oral treatment with pyridostigmine can be used once control is achieved.)</p> <p><i>Long-term management</i> 1mg/kg 4 hourly oral pyridostigmine is preferable in the long term management as it has a longer duration of action.</p>
ROUTE	IV infusion, IM injection
RECONSTITUTION	Add 1ml of Neostigmine to 19ml of water for injection to make a 125mcg/ml solution.
ADMINISTRATION	Slow IV bolus injection using the proximal IV bung.
MONITORING	Respiratory and cardiovascular status.
ADVERSE EFFECTS	Muscle weakness, tremors, bradycardia, hypotension, respiratory depression, bronchospasm, diarrhoea, and excessive salivation.
CONTRAINDICATION	<p>1. Intestinal or urinary obstruction</p> <p>2. Bradycardia or hypotension</p> <p>3. Use cautiously in patients with bronchospasm or cardiac arrhythmia.</p> <p>4. Aminoglycoside antibiotics are hazardous in patients with any of the myasthenic disorders because they interfere with neuromuscular transmission causing respiratory depression.</p>
COMPATIBLE DRUGS	Glycopyrronium, heparin, hydrocortisone, netilmicin, pentobarbital, potassium chloride.

## REFERENCES

1. Neonatal Formulary 5, Drug use in Pregnancy and First Year of Life, 2007, Blackwell Publishing
2. Volpe J. Neuromuscular disorders. In: Neurology of the newborn 4<sup>th</sup> ed 2001; p657-70