FULLSHARED CARE AGREEMENT FOR

Nebulised Colistimethate sodium (Promixin®)

in the treatment of

Pseudomonas aeruginosa lung infections in children and adults

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On behalf of:
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Full Shared Care Policy for the prescribing of nebulised colistimethate (Promixin®) in the treatment of *Pseudomonas aeruginosa* lung infections in children and adults

**Introduction and purpose**

This shared care agreement has been produced following classification of colistimethate (Promixin®) in the Leicestershire drug traffic light scheme. See website at [www.lmsg.nhs.uk](http://www.lmsg.nhs.uk)

Shared care has been defined as the mechanism of sharing patient care between primary and secondary care providers. This document sets out these responsibilities from initial diagnosis to ongoing support.

**Disease Background**

*Pseudomonas aeruginosa* is a pathogen that causes severe lung damage in patients who become colonised and then chronically infected. Patients with Cystic Fibrosis and Bronchiectasis are at risk of significant morbidity and mortality from the damage caused by this pathogen. Nebulised *antipseudomonal* antibiotic treatment has been shown to improve lung function, slow the rate of respiratory decline and reduce the frequency of exacerbations of infection in these patients. Nebulised antibiotics are able to achieve high local concentrations with low systemic absorption and toxicity as opposed to intravenous antibiotics, where there is high risk of developing adverse effects from systemic absorption.

**Drug covered by the agreement**

Colistimethate sodium (Promixin®) is indicated for the treatment by nebulisation of colonisation and infections of the lung due to susceptible *Pseudomonas aeruginosa* in patients with cystic fibrosis.

The licensed dose for children ≥ 2 years and adults is 1-2 million units twice daily.

Promixin® is inhaled using an I-neb® nebuliser, supplied free of charge by the manufacturers of Promixin® (Profile). The I-neb® is a small handheld device and patients may prefer it for its portability, quiet operation and reduced nebulisation time of approximately 2-6 minutes dependent on breathing technique. It may therefore improve adherence. The device has a mouthpiece rather than a mask and is breath-actuated therefore patients must be of an age that they are capable of using it.

When Promixin® is to be initiated by the Specialist, a letter requesting a prescription for the Promixin® will be sent to the GP. The patient will obtain a supply via their community pharmacy. The nebuliser will be dispensed by the company (Profile Pharma) and patients will be assessed for their ability to use the device and instructed how to use and care for the nebuliser. The first dose will be administered in hospital. Patients will also be advised about the Patient Support Programme provided by the manufacturer of Promixin®, which offers maintenance and service of the nebuliser free of charge. An information booklet is provided with the nebuliser with details on usage and the patient helpline number 0800 130 0857.
**Dosage and Administration**

The I-neb® nebuliser requires a disc to be inserted in order for it to function. This disc contains important data that enables the I-neb® to deliver the pre-set dose at the correct power setting. Two discs are found in each pack of Promixin® vials and after 30 doses of Promixin® the disc needs to be replaced. It is therefore very important when prescribing Promixin® that only full packs are prescribed. The second disc is supplied to enable use of other agents via the I-neb device. A rescue disc is also supplied with the nebuliser in case of loss or damage and further discs can be obtained by calling the helpline.

The dose of Promixin administered depends on the initial dilution of the 1 million International Unit (MU) vial. Promixin® is prepared by diluting the vial with 1 or 2 mls of water for injection depending on the strength of Promixin® the specialist requires the patient to have. This should be stated clearly on the prescription. The dose should be given twice a day.

Most patients will prepare Promixin® 1 MU with 1 ml water for injection and nebulise twice daily.

**Summary table**

<table>
<thead>
<tr>
<th>Nebuliser</th>
<th>Equivalent Dose</th>
<th>Preparation of drug used</th>
<th>Diluent and volume</th>
<th>Volume used in nebuliser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promixin® (colistin, colistimethate sodium)</td>
<td>I-neb®</td>
<td>1 MU</td>
<td>1 x 1 MU vial</td>
<td>2 ml water for inj.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 MU</td>
<td>1 x 1 MU vial</td>
<td>1 ml water for inj.</td>
</tr>
</tbody>
</table>

**Secondary Care Clinician Responsibilities**

- Diagnosis of *pseudomonas aeruginosa* infection in either CF patients or Bronchiectasis patients based on a timely and comprehensive assessment.
- Request initial prescription for Promixin® and ensure the first test dose is carried out before a continuous prescription is supplied.
- If initial dose is successful then a full 30 days prescription to be supplied using an out patient script only.
- Contact with Profile Pharma to supply nebuliser system, and ensure training of patient/carer in the use of the nebuliser system.
- Supplying the initial sundries where required (needles, syringes, sharps bin).
- Monitoring for response and adverse drug reactions (ADRs) during the first test dose and the initiation period.
- Liaison with the general practitioner (GP) to share the patient’s care when the test dose has been carried out and proven benefit has been established using the shared care agreement form: [Shared Care Agreement Form](#).
- Outlining to GP when therapy may be stopped assuming no improvement is recognised in the patient’s condition. Suggest a review of patients condition and efficacy of treatment 6 months after discharge from secondary care, and then annually thereafter, with consideration at each review as to whether treatment needs to continue.
- Evaluating ADRs raised by the GP and evaluating any concerns arising from physical checks & reviews undertaken by GP.
- Advising GP on related issues such as drug interactions etc.
Advising the GP on supply issues related to the prescribing of nebulised Promixin®.

In relation to eradication therapy, secondary care will supply the patient with sputum collection pots and advise the patient to send the specimens to their GP for processing in the laboratory.

The Consultant Physician will follow up results of the sputum cultures after the three months eradication therapy, and relay any information to the GP.

**GP Responsibilities**

- Confirm or decline request to share patient’s care as soon as possible, using the shared care agreement form.
- Observing patient for evidence of ADRs or any abnormalities and raising with secondary care clinician if necessary
- Continue to prescribe this on a monthly basis (2 boxes of 30 ampoules every 30 days to prevent splitting a box)
- Prescription of Promixin® after achievement of a stable dose regime by secondary care
- Ensuring advice is sought from the secondary care clinician if there is any significant change in the patient’s physical health status
- Reducing and stopping treatment in line with secondary care clinicians original request
- For eradication therapy, GP should ensure sputum samples from the patient are sent for processing two weeks after patient has completed the three month eradication therapy, and send any further samples for processing if requested to.

**Contact for support and advice**

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Supporting Information

Indications for Therapy and Dosage

Nebulised Colistimethate sodium (Promixin®) is indicated for chronic pulmonary *Pseudomonas Aeruginosa* infection in Cystic fibrosis patients. It is also indicated for eradication of first pulmonary colonisation with *Pseudomonas Aeruginosa* for a period of three weeks – three months (initially with high dose ciprofloxacin)

Eradication of first growth of *Pseudomonas aeruginosa*

**Age ≥ 2 years & adults**

1 to 2 million units (MU) nebulised BD for 3 months.

Ciprofloxacin twice daily is co-administered usually for 6 weeks. Dose as outlined below.

**Ciprofloxacin Dosing Guidance for Children with Cystic Fibrosis**

<table>
<thead>
<tr>
<th>CIPROFLOXACIN</th>
<th>1-12 months</th>
<th>3-5 years</th>
<th>7-12 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>250mg/5ml suspension</td>
<td>15 mg/kg BD</td>
<td>(13kg-18kg) 250mg BD</td>
<td>(24-40kg) 500mg BD</td>
</tr>
<tr>
<td>250mg tab</td>
<td>&gt;12 months</td>
<td>5-7years</td>
<td>12 yr-adult</td>
</tr>
<tr>
<td>500mg tab</td>
<td>20mg/kg BD or</td>
<td>(19-23kg) 375mg BD</td>
<td>(&gt;40kg)</td>
</tr>
<tr>
<td>750mg tab</td>
<td>1-2yrs</td>
<td>7-12 years</td>
<td>750mg BD</td>
</tr>
<tr>
<td></td>
<td>(8kg-12.5kg) 125mg BD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Prophylaxis**

Promixin® is nebulised twice daily on a continual basis. Dose as for eradication.

**Contra-indications, Precautions and Warnings**

- Promixin® is contra-indicated in patients with known hypersensitivity to colistimethate sodium.
- Also, contra-indicated in patients with myasthenia gravis
- Use with caution in renal impairment
- Should be used with extreme caution in patients with porphyria
- There is evidence that colistimethate sodium crosses the placenta and consequently there is potential for foetal toxicity if administered during pregnancy. Promixin® should only be given during pregnancy if the benefits outweigh any potential risk. Advising patients and carers is the responsibility of the specialist service
- Colistimethate sodium is excreted in breast milk; breast feeding is not recommended during therapy.
**Monitoring**

Regular monitoring during treatment is essential to detect adverse reactions at an early stage and patients should be counseled about the risk factors and to report all signs and symptoms of toxicity. Through the hospital consultant, regular cough swabs / sputum samples / respiratory function monitoring must take place.

**Drug interactions**

Nebulised antibiotics should not be given within an hour of dornase-alfa (Pulmozyme®).

Concomitant use of inhaled colistimethate sodium with other medications that are nephrotoxic or neurotoxic (e.g. cephalothin sodium, aminoglycosides, non-depolarising muscle relaxants) including those which are administered by the i.v. or i.m. routes should only be undertaken with the greatest caution.

**Adverse Effects**

Nebulised Promixin® causes bronchoconstriction in some patients which may lead to discontinuation. This may be relieved in some patients by using an inhaled bronchodilator prior to nebulisation.

**Availability**

Colistimethate sodium (Promixin®) powder for reconstitution 1 million units vials may be obtained on prescription via the community pharmacist.

**Cost**

Each 1 MU vial costs £4.60. A month’s supply of Promixin® 1 million unit vials (60) is £276 (excluding diluent). This supply will deliver an equivalent dose of 1MU BD or 2MU BD depending on dilution. (see dosage and administration)

**References**

1. Summary of Product Characteristics (SPC) – Promixin Injection ® (Profile Pharma limited); eMC, revised March2009.