BCAP Prescribing and Therapeutics Committee
Shared Care Guidance

for the prescription of nebulised colistin (colomycin)

Indication

Nebulised colistin (Colomycin® injection) is indicated for treatment, by inhalation, of *Pseudomonas aeruginosa* lung infections in patients with cystic fibrosis (CF). In practice this means eradication of the first pulmonary colonisation with *P. aeruginosa* and for chronic *P. aeruginosa* infection (2 or more isolates in a 6 month period) in CF.

Background

Children and adults with cystic fibrosis (CF) are prone to respiratory tract infections with specific pathogens. During childhood and adolescence the majority will become first colonised, then chronically infected, with *P. aeruginosa.* This is the major cause of morbidity and mortality in people with CF.

Treatment Aims

Nebulised anti-pseudomonal antibiotic treatment has been shown to improve lung function, slow the rate of respiratory decline and reduce the frequency of infective exacerbations in people with CF. This reduces the need for intravenous antibiotics and hospitalisation. Nebulised antibiotics achieve high local concentrations with low systemic absorption and toxicity as opposed to intravenous antibiotics which, when used repeatedly, are associated with a high risk of developing adverse effects.

Treatment Schedule

Eradication

Adults

Colistin 2 million units nebulised twice a day for 3 months.
Ciprofloxacin 750mg twice daily is co-administered.

Children

<2 years	Colistin 1 million units nebulised twice a day for 3 months.
>2 years	Colistin 2 million units nebulised twice a day for 3 months.

<5 years	Ciprofloxacin 15mg/kg twice daily is co-administered.
>5 years	Ciprofloxacin 20mg/kg (maximum 750mg) twice daily is co-administered.

Ciprofloxacin has been traditionally co-administered in children for 3 weeks, but many Units are now extending the course to 3 months after review.

Maintenance

As recommended by the Cystic Fibrosis Trust:

<2 years	1,000,000 units (1 million units) twice daily
>2 years	2,000,000 units (2 million units) twice daily

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Dr J C Tyrrell, Paediatrician, Dr A Alexander, Respiratory Physician, Judith Rollason, Respiratory Specialist Nurse
Carol Jackson, Pharmacist, Issy Hall, Pharmacist

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Adults 2,000,000 units (2 million units) twice daily

Administration
Before nebulising a dose of colistin, the patient should either inhale or nebulise a dose of bronchodilator. Each vial of colistin (Colomycin®) should then be reconstituted with water for injections or 0.9% sodium chloride injection to an appropriate volume for nebulisation (usually 2-4mls). The resulting solution is then nebulised to dryness using a PARI LC plus nebuliser kit with filter.

Equipment
The PARI nebuliser kit and filter pads are supplied by the hospital. Adults will get them via the Respiratory Specialist Nurses and children via the Children's Outpatient Department. Filter pads should be changed each day or with each dose if wet or discoloured. The nebuliser will be serviced annually by the hospital.

Availability of Medicines
Colistin (Colomycin®) 1 million and 2 million units, water for injections and 0.9% sodium chloride injections may be obtained on prescription via the community pharmacist.

Monitoring
Through the hospital Consultant: Regular cough swabs/sputum samples.
Regular respiratory function monitoring.
Monitoring symptoms.

Adverse Effects
Transpulmonary absorption of colistin is generally considered to be negligible; therefore, there is a low risk of systemic toxicity. Inhalation may induce coughing or bronchospasm (chest tightness and breathlessness) which may lead to discontinuation of therapy. The first dose should be administered in hospital. In order to minimise risk of bronchospasm, each dose of nebulised colistin is preceded by a dose of inhaled or nebulised bronchodilator.

Sore throat or mouth has been reported and may be due to *Candida albicans* infection or hypersensitivity to colistin.

Tingling of lips and tongue has been reported.

Contra-indications, Precautions and Warnings
- Colisitin is contra-indicated in patients with known hypersensitivity to colistin.
- Colistin is contra-indicated in patients with Myasthenia Gravis.
- Colistin should be used in extreme caution in patients with Porphyria.
- Colistin crosses the placenta barrier and there may be a risk of foetal toxicity if repeated doses are given to pregnant patients. Colistin is also excreted in breast milk. It's use in pregnant or breast-feeding mothers should only proceed if the benefit to the mother outweighs the potential risk to foetus and infant. Exposure to pregnant carers during nebulisation should be minimised. Advising patient and carers is the responsibility of the specialist service.

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Interactions

As transpulmonary absorption of colistin is generally considered to be negligible, there are no recorded drug interactions when using the nebulised route.

Shared Care Responsibilities

Hospital Consultant:

- Liaison with the GP to agree to share the patient's care.
- Assessing suitability of patients for treatment.
- Initiating and supplying the initial 28 days treatment.
- Training of patient/carer in the use of the nebuliser system.
- Providing and maintaining the nebuliser and compressor.
- Providing PARI nebuliser kit and filters.
- Assessing and monitoring the patient's response to treatment.

General Practitioner:

- Prescribing of colistin and diluents after initial 28 days treatment.
- Liaison with the Hospital Consultant regarding any complications of treatment.

Clinicians are advised to consult the current Summary of Product Characteristics (SPC) for up to date information on Colistin.

References

Antibiotic Treatment for Cystic Fibrosis. Report of the UK Cystic Fibrosis Trust Antibiotic Group. September 2002.
Summary of Product Characteristics Colomycin® Injection. June 2003. Forest Laboratories UK Limited.
Cystic Fibrosis in Children and Adults, The Leeds Method of Management, number 6 2003.

Contact Points

Via the RUH switchboard on 01225 428331:

Children

Dr J C Tyrrell	Consultant Paediatrician
Carol Jackson	Senior Pharmacist, Women and Children's Health

Adults

Dr A Alexander	Consultant Respiratory Physician
Judith Rollason	Respiratory Specialist Nurse
Issy Hall	Senior Pharmacist, Respiratory and Neurology

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