SHARED CARE GUIDELINES FOR PRESCRIBING COLISTIMETHATE SODIUM (COLOMYCIN®) INJECTION IN PSEUDOMONAS AERUGINOSA LUNG INFECTIONS IN ADULTS WITH BRONCHIECTASIS (NON-CYSTIC FIBROSIS)

INDICATION

Pseudomonas aeruginosa causes severe lung damage in patients who become colonised and then chronically infected. Patients with bronchiectasis are at risk of significant morbidity and mortality from the damage caused by this pathogen. Nebulised anti-pseudomonal 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 (rather than intravenous) Colomycin® achieves high local concentrations with low systemic absorption and toxicity.

Colomycin® is indicated for the treatment by inhalation of Pseudomonas aeruginosa lung infection in patients with cystic fibrosis (CF), and by intravenous administration for the treatment of some serious infections caused by Gram-negative bacteria, including those of the lower respiratory tract, when more commonly used systemic antibacterial agents may be contra-indicated or may be ineffective because of bacterial resistance[1].

Use of nebulised or inhaled colistimethate sodium for treating non-cystic fibrosis bronchiectasis is off-label. British Thoracic Society guidance states that for local treatment of lower respiratory tract infections Colomycin® powder is dissolved in 2-4 ml 0.9% sodium chloride intravenous infusion for use in a nebuliser attached to an air/oxygen supply[2].

The usual dose of Colomycin® injection prescribed for nebulisation in bronchiectasis patients is 1-2 million units 12 hourly[2].

At current prices an individual vial of 1 million units = £1.80, 2 million units = £3.24[3].

AREAS OF RESPONSIBILITY FOR SHARED CARE

This shared care agreement outlines suggested ways in which the responsibilities for managing the prescribing of Colomycin® can be shared between the specialist and general practitioner (GP). GPs are invited to participate. If the GP is not confident to undertake these roles, then he or she is under no obligation to do so. In such an event, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. If a specialist asks the GP to prescribe this drug, the GP should reply to this request as soon as practicable.

Sharing of care assumes communication between the specialist, GP and patient. The intention to share care is usually explained to the patient by the doctor initiating treatment. It is important that patients are consulted about treatment and are in agreement with it.

The doctor who prescribes the medication legally assumes clinical responsibility for the drug and the consequences of its use.

REFERRAL AND INITIATION

Shared Care is only appropriate if it provides the optimum solution for the patient.

- Patients will only be referred to the GP once the GP has agreed in each individual case

Specialist Responsibilities	
1	To assess the patient and establish the diagnosis, determine a management strategy and ensure appropriate follow-up in conjunction with the GP.
2	Where appropriate: ○ to assess suitability of the patient for treatment and perform a “test dose” with lung function monitoring; ○ to initiate and supply at least 28 days treatment; ○ to arrange the provision of a nebuliser and appropriate giving set and training for the patient and carer; ○ to supply initial sundries; ○ to monitor the patient for response and any adverse drug reactions (ADR) during the initiation period; ○ To obtain consent from the patient’s GP to continue prescribing once treatment has been stabilised; ○ to outline to the GP when treatment should be discontinued if no improvement in the patient’s condition is seen; ○ to evaluate adverse drug reactions (ADRs) and other concerns reported by the GP related to the use of Colomycin® by the patient; ○ to monitor the patient and their therapy at appropriate intervals.
3	Ensure that patients know what to do and who to contact if they experience adverse events or an exacerbation of their condition.
4	To provide the GP with appropriate prescribing information and any additional information requested.
5	To be available for advice if the patient’s condition changes.
6	To ensure that patients can be urgently reviewed when needed.
7	To ensure the patient has given informed consent to their treatment.
8	To liaise with the GP on any suggested changes in prescribed therapy.
9	To discontinue treatment if no longer thought to be beneficial.

General Practitioner Responsibilities	
1	No formal monitoring is required. Monitor the patient’s general health.
2	To prescribe Colomycin® injection for nebulisation and sodium chloride 0.9% for injection 5ml plastic ampoules once a stable dosing regime has been determined by secondary care.
4	To seek advice from secondary care if there is a significant change in the health status of the patient.
5	To liaise with the consultant regarding any complications of treatment.
6	To reduce and stop treatment in line with secondary care clinicians original request

Patient's role (or that of carer)	
1	Report to the specialist or GP if he or she does not have a clear understanding of the treatment.
2	Attend appropriate consultant and GP appointments
3	Share any concerns in relation to treatment with Colomycin®
4	Use written and other information on the medication.
5	Report any adverse effects to the specialist or GP whilst taking Colomycin®
6	Seek help urgently if suspect side effects, or otherwise unwell.

SUPPORTING INFORMATION

Dosage and Administration of Colomycin® injection[2,4]

Adults: 2 million units bd
Children: 1-2 million units bd (If age <2 years 500 000 units bd).

Before nebulising a dose of Colomycin®, the patient should either inhale or nebulise a dose of bronchodilator. Each vial of Colomycin® should then be reconstituted with 2-4ml 0.9% sodium chloride solution and poured into the nebuliser.

Monitoring

Through the hospital consultant: regular cough swabs/sputum samples, regular respiratory function monitoring and monitoring symptoms; assess renal function at baseline and at end of first month.

Contraindications

Colomycin® is contraindicated:

- in patients with a known hypersensitivity to the drug
- in patients with myasthenia gravis
- in pregnancy and if breast-feeding, unless the benefits outweigh the risks

Special Warnings

Colomycin® should be used with extreme caution in patients with porphyria.
Colomycin® should be used with caution in renal impairment (Colomycin® is excreted via the kidneys).
Bronchial hyper-reactivity in response to Colomycin® may develop over time with continued use. Check pre- and post-dose FEV1 in patients who report any symptoms suggestive of this[5].

Side Effects

Transpulmonary absorption of Colomycin® is generally considered to be negligible; therefore, there is a low risk of systemic toxicity. According to the summary of product characteristics, Colomycin® injection is very commonly associated with adverse respiratory effects (affecting at least 1 in 10 people) including cough, dyspnoea (shortness of breath), bronchospasm and sore throat.
The bronchoconstriction may be relieved in some patients by using an inhaled bronchodilator prior to nebulisation.
Sore throat or mouth has been reported and may be due to *Candida albicans* infection or hypersensitivity. Skin rash may also indicate hypersensitivity, if this occurs treatment should be withdrawn.
Long-term use of antibiotics may result in antibiotic resistance in individual patients and alternative antibiotics should be chosen depending on sensitivity results. Susceptibility testing should be performed for people who are treated on a long-term basis, at regular clinic visits and whenever the person experiences an exacerbation[2].

Drug Interactions

Concomitant use of colistimethate sodium with other medicinal products of neurotoxic and/or nephrotoxic potential should be avoided. These include the aminoglycoside antibiotics such as gentamicin, amikacin, netilmicin and tobramycin. There may be an increased risk of nephrotoxicity if given concomitantly with cephalosporin antibiotics.

The manufacturer's summary of product characteristics (SPC) and the most current edition of the British National Formulary should be consulted for full information on contra-indications, warnings, side-effects and drug interactions.

References

1. Summary of Product Characteristics. Colomycin injection (Forest Laboratories UK Ltd). Accessed via http://www.medicines.org.uk/emc/ on 2nd March 2015.
2. Bronchiectasis (non-CF) Guideline Group. British Thoracic Society. Guideline for non-CF Bronchiectasis. Thorax. 2010; 65 S I.
3. British Medical Association and Royal Pharmaceutical Society of Great Britain. British National Formulary. BMJ Group and RPS Publishing. London; February 2015.
4. National Institute for Health and Care Excellence (NICEEvidence summary: unlicensed or off-label medicine. ESUOM25: Non-cystic fibrosis bronchiectasis: colistimethate sodium. January 2014
5. Derbyshire Joint Area Prescribing Committee Shared Care Agreement. Use of nebulised Colomycin injection in pseudomonas aeruginosa lung Infections in Adults with bronchiectasis (non-Cystic Fibrosis). November 2012

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