NHS England

Clinical Commissioning Policy: Dornase alfa inhaled therapy for primary ciliary dyskinesia (all ages)

Reference: NHS England: 16029/P

NHS England INFORMATION READER BOX		
Directorate		
Medical	Operations and Information	**Specialised Commissioning**
Nursing	Trans. & Corp. Ops.	Commissioning Strategy
Finance		

Publications Gateway Reference:	**05527s**
Document Purpose	Policy
Document Name	Clinical Commissioning Policy 16029/P
Author	Specialised Commissioning Team
Publication Date	13 July 2016
Target Audience	CCG Clinical Leaders, Care Trust CEs, Foundation Trust CEs , Medical Directors, Directors of PH, Directors of Nursing, NHS England Regional Directors, NHS England Directors of Commissioning Operations, Directors of Finance, NHS Trust CEs
Additional Circulation List	
Description	Not Routinely Commissioned - NHS England will not routinely commission this specialised treatment in accordance with the criteria described in this policy.
Cross Reference	N/A
Superseded Docs (if applicable)	N/A
Action Required	N/A
Timing / Deadlines (if applicable)	**N/A**
Contact Details for further information	england.specialisedcommissioning@nhs.net

Document Status

This is a controlled document. Whilst this document may be printed, the electronic version posted on the intranet is the controlled copy. Any printed copies of this document are not controlled. As a controlled document, this document should not be saved onto local or network drives but should always be accessed from the intranet.

Clinical Commissioning Policy: Dornase alfa inhaled therapy for primary ciliary dyskinesia (all ages)

First published: July 2016

Prepared by NHS England Specialised Services Clinical Reference Group for Paediatric Medicine

Published by NHS England, in electronic format only.

Contents

Policy Statement

NHS England will not routinely commission dornase alfa inhaled therapy for primary ciliary dyskinesia (all ages) in accordance with the criteria outlined in this document. In creating this policy NHS England has reviewed this clinical condition and the options for its treatment. It has considered the place of this treatment in current clinical practice, whether scientific research has shown the treatment to be of benefit to patients, (including how any benefit is balanced against possible risks) and whether its use represents the best use of NHS resources. This policy document outlines the arrangements for funding of this treatment for the population in England.

Equality Statement

Promoting equality and addressing health inequalities are at the heart of NHS England's values. Throughout the development of the policies and processes cited in this document, we have:

- Given due regard to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it; and
- Given regard to the need to reduce inequalities between patients in access to, and outcomes from healthcare services and to ensure services are provided in an integrated way where this might reduce health inequalities

Plain Language Summary

About primary ciliary dyskinesia

Primary ciliary dyskinesia (PCD) is an inherited and relatively rare illness. It affects tiny, hair-like structures called 'cilia' (or 'cilium') that line the airways.

If the cilium are not working properly, bacteria can build up in the airways. This can cause:

- breathing problems
- infections
- other problems that mainly affect the sinuses, ears, and lungs.

If left untreated, PCD can lead to lung damage.

About the current treatment

Patients with PCD need regular medical input. This can include:

- out-patient reviews
- hospital stays for intense physiotherapy and antibiotics, including:
  - antibiotics delivered directly into the lung in the form of a mist (called 'nebulised antibiotics')
  - medicines called 'mucolytics' that make mucus (sputum) less sticky to help treat lung infections
- ventilation support, where the patient is helped to breathe by a machine (this can happen occasionally)
- surgical intervention (in severe cases), such as:
  - removal of a lobe of the lung (called a 'lobectomy')
  - a lung transplant.

Inhaled medicines are used to

- relieve the tight feeling in the airways and inflammation in the lungs
- reduce the stickiness of mucus in the airways is
- treat serious infections in the lungs.

About the new treatment

Dornase alfa is used to reduce the number of lung infections and improve lung function in patients with cystic fibrosis and there is some evidence that it can help patients with lung problems. PCD is similar to CF as they both involve problems with clearing the airways of mucus and there is clinical interest as to whether dornase alfa may also work for PCD patients.

Dornase alfa is being requested for:

- short term use (three to six months) to rescue and recover lung function decline in some patients
- part of a permanent therapy approach in other patients.

What we have decided

NHS England has carefully reviewed the evidence to treat primary ciliary dyskinesia with dornase alfa. We have concluded that there is not enough evidence to make the treatment available at this time.

1 Introduction

This document describes the evidence that has been considered by NHS England in formulating a proposal to not routinely commission dornase alfa as second line treatment for selected patients with primary ciliary dyskinesia who have not responded to conventional treatments.

Primary ciliary dyskinesia (PCD) is a relatively rare hereditary disorder characterised by chronic infection of the upper and lower airway. Approximately half of patients with PCD will have situs inverses, a congenital condition in which the major visceral organs are reversed. Male infertility is common.

The airway symptoms are caused by impaired mucociliary clearance which results in the accumulation of airway secretions, often containing bacteria and allergens, leading to inflammation and chronic infection. The impaired mucociliary clearance is a consequence of abnormal ciliary beat function. Without appropriate early treatment, progressive chronic lung disease and bronchiectasis develop, and mismanagement of hearing impairment is common. Bronchiectasis can occur in infancy demonstrating the need for early instigation of appropriate treatments. Once irreversible lung damage is established, significant medical input is required with regular hospitalisation for antibiotics, ventilator support with some cases requiring surgical intervention including lobectomy and lung transplantation.

Dornase alfa is a highly purified solution of recombinant human deoxyribonuclease (rhDNase), it reduces viscosity in the lungs and promotes improved clearance of secretions, and is an established inhaled therapy in cystic fibrosis (CF). It is being requested for use in patients who have not responded to conventional treatments with the aim of preventing progressive lung function decline, further lung damage and respiratory failure.

2 Definitions

Primary ciliary dyskinesia (PCD) is a genetic disorder characterised by ultra-structural defects of the cilia. This leads to abnormal function of the cilia in different organs, including the lungs. PCD is an autosomal-recessive disease. The main

presentation of PCD includes chronic airway infection, inflammation, recurrent pneumonia, bronchiectasis and sinusitis. If untreated, it can lead to irreversible damage of the lung.

Dornase alfa is a highly purified solution of recombinant human deoxyribonuclease (rhDNase), it reduces viscosity in the lungs and promotes improved clearance of secretions. The recommended dose for use in most people with CF is 2.5 mg (in one single-use ampoule) inhaled once daily using a recommended nebulizer; however, some individuals may benefit from twice-daily inhalation. Dornase alfa is an established therapy in CF and is used in conjunction with other standard CF therapies.

3 Aims and Objectives

This policy aims to define whether there is sufficient evidence to support the routine commissioning of dornase alfa as part of the treatment pathway for patients with primary ciliary dyskinesia (PCD).

The objective is to ensure evidence based commissioning in the use of dornase alfa for the treatment of adults and children with PCD.

4 Epidemiology and Needs Assessment

Primary ciliary dyskinesia (PCD) is inherited as an autosomal recessive condition. The prevalence is unknown but is probably between 1:26,000 and 1:40,000 in the Caucasian population, with higher incidence in the Asian population. There are estimated to be 700 cases of primary ciliary dyskinesia in England, 350 adults and 350 children.

5 Evidence Base

NHS England has concluded that there is not sufficient evidence to support a proposal for the routine commissioning of Dornase Alfa in the treatment of Primary Ciliary Dyskinesia.

There is only low level evidence (Grade 3 studies) on the use of dornase alfa (DNase) in primary ciliary dyskinesia. Three case reports (Desai et al, 1995; Ten Berge et al, 1999; and El-Abiad et al, 2007) were identified in the literature search. These three case reports reported improvement in respiratory symptoms (respiratory rate, cough, sputum production), suggestive of improvement in quality of life. No studies used a quality of life index. No studies reported incidence of lung infections.

Two case studies measured pulmonary function at both baseline and post dornase alfa. Ten Berge et al (1999) reported improvement 11 days post intervention. Desai et al (1995) measured lung function 4 weeks post intervention and reported improvement.

No side effects were reported in the cases reports. No data was provided on cost effectiveness.

6 Documents which have informed this Policy

NHS Clinical Commissioning Policy: Inhaled Therapy for Adults and Children with Cystic Fibrosis. Ref: NHS England A01/P/b

Primary Ciliary Dyskinesia (PCD) Diagnosis and Management Service (Children). Ref: NHS England E13/S(HSS)/g

7 Date of Review

This document will be reviewed when information is received which indicates that the policy requires revision.

References

Desai M, Weller PH, Spencer DA.. Clinical benefit from nebulized human recombinant DNase in Kartagener's syndrome.. Pediatr Pulmonol 1995; 20(5):307-8.

El-Abiad, Nisreen M.; Clifton, Shelley; Nasr, Samya Z.. Long-term use of nebulized human recombinant DNase1 in two siblings with primary ciliary dyskinesia. Respir Med 2007; 101(10):247-265.

Ten Berge M, Brinkhorst G, Kroon AA, et al. DNase treatment in primary ciliary dyskinesia – assessment by nocturnal pulse oximetry.. Pediatr Pulmonol 1999; 27(1):59-61.