Respiratory infections with Pseudomonas aeruginosa in children with Cystic Fibrosis; early surveillance and prevention.

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON25471

Source
NTR

Brief title
POPeye-study

Intervention

Outcome measures

Primary outcome

Early P. aeruginosa colonization as confirmed by

-persistence of P. aeruginosa in sputum or oropharygeal swab culture in two consecutive samples, taken > 3 days apart;

-P. aeruginosa in one oropharyngeal swab or sputum culture with pulmonary exacerbation.

Secondary outcome

MICROBIOLOGICAL:

1. Age at first positive culture;

2. Time to P. aeruginosa colonisation;

3. Respiratory pathogens in culture;

4. Resistance pattern of respiratory pathogens.

SEROLOGICAL:

5. Seroconversion for anti-pseudomonal antibodies;

CLINICAL:

6. Adverse events;

7. Clinical parameters (lung function, body weight and chest radiograph scores, inflammation parameters);

8. Number of pulmonal exacerbations;

9. Antimicrobial agent use.

Study description

Background summary

Cystic fibrosis (CF) is an autosomal recessive disease characterized by chronic obstructive pulmonary disease with recurrent respiratory tract infections. Chronic colonization with P. aeruginosa is a major cause of progressive loss of lung function, morbidity and mortality. Initial acquisition and transient colonization is transformed into an irreversible chronic colonization with antibiotic-resistent bacteria embedded in a biofilm in about 12 months. The prevalence of P. aeruginosa colonization increases from 20% of patients by age 1 until 80-85% by age 20. Early antimicrobial treatment of initial infection probably delays chronic colonization. However, diagnosis of P.aeruginosa infection with traditionally performed oropharyngeal cultures is insensitive and colonization of P.aeruginosa often reappears after interruption of antimicrobial treatment.

Our hypothesis is that the initial infection with P. aeruginosa occurs at earlier age than previously reported and that prophylactic treatment of P. aeruginosa-negative CF-patients will either prevent or delay the first acquisition of P.aeruginosa or eradicate the organism before the onset of persistent colonization and accompanying pulmonary inflammatory response.

Serological evaluation for anti-pseudomonal antibodies and culture of sputum will be performed in addition to the traditional oropharyngeal cultures to improve early P.aeruginosa detection. A 3-years randomized, placebo-controlled trial will be performed in P. aeruginosa-negative CF patients to evaluate the effect of three-monthly courses of inhaled colistin (106 IU b.i.d) and oral ciprofloxacin (20 mg/kg/day) on the acquisition of P. aeruginosa.

The present project aims to early identify P.aeruginosa infection in the course of CF and to find support for the use of prophylactic antimicrobial treatment to prevent or delay the early colonization of P. aeruginosa to preserve lung function.

Study questions:

1. Can the sensitivity of the surveillance of initial P. aeruginosa infection in children with CF be improved by measurement of anti-Pseudomonal antibodies?

2. Can the initial P. aeruginosa infection or early colonization be prevented or delayed by the prophylactic treatment of 3-monthly courses of inhaled colistin and oral ciprofloxacin?

3. What are the determinants for P.aeruginosa acquisition in children with CF?

Study objective

Our hypothesis is that the initial infection with P. aeruginosa occurs at earlier age than previously reported and that prophylactic treatment of P. aeruginosa-negative CF-patients will either prevent or delay the first acquisition of P.aeruginosa or eradicate the organism before the onset of persistent colonization and accompanying pulmonary inflammatory response.

Intervention

Ciprofloxacin 10 mg/kg po. or matching placebo bid & colistin 1 MIU inhalation or matching placebo bid;
3-monthly courses of 3 weeks, total study duration 3 years.

Contacts

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Eligibility criteria

Inclusion criteria

1. CF diagnosis as confirmed by sweat chloride test and/or genotyping;

2. Age< 18 y;

3. No evidence of P. aeruginosa in cultures taken in period 2004-2005;

4. Antibody titer < 1: 1250 for three antigens of P. aeruginosa;

5. No regular treatment against P. aeruginosa;

6. Informed consent.

Exclusion criteria

1. Age > 18 years;

2. P. aeruginosa in cultures after 2003;

3. Participating in another trial.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Masking:	Double blinded (masking used)

Control:	Placebo

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-07-2005
Enrollment:	100
Type:	Actual

Ethics review

Positive opinion

Date:	12-07-2005
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL37
NTR-old	NTR64
Other	: N/A
ISRCTN	ISRCTN11604593

Study results

Summary results

A controlled trial of cycled antibiotic prophylaxis to prevent initial Pseudomonas aeruginosa infection in children with cystic fibrosis.
G.A. Tramper-Stranders, T.F.W. Wolfs, S. van Haren Noman, W.M.C. van Aalderen, A.F. Nagelkerke, M. Nuijsink, J.L.L. Kimpen, C.K. van der Ent.
Thorax 2010 Oct;65:915-20