Longitudinal Assessment of Risk Factors for and Impact of Pseudomonas aeruginosa and Early Anti-Pseudomonal Treatment in Children with CF (EPIC-002)

Summary

This observational study was conducted to learn about what risk factors may lead to lung infections caused by Pseudomonas aeruginosa (Pa) in children with CF and what the impact of those infections may be. The original five year study has been extended for an additional 10 years to allow additional information to be collected about lung infections, symptoms, and bacteria for up to 15 years in children who enrolled in this study. Participants who participated in this study and had Pa isolated during the study and fulfilled eligibility criteria also had the option to enroll in the EPIC clinical trial.

Specimen Information

Status: Specimens are Available

Blood was collected annually for banking for 2.5 to 5 years (depending on when patients were enrolled). OP cultures were also evaluated annually and if P. aeruginosa was isolated, the isolates were sent to Seattle Children's for banking. A single collection of a buccal swab for DNA was added at the Year 5 timepoint.

Visit #	Time From Baseline	Specimens Collected
1	+0 Days	Serum
2	+1 Years	PA isolates, Serum
3	+2 Years	PA isolates, Serum
4	+3 Years	PA isolates, Serum
5	+4 Years	PA isolates, Serum
6	+5 Years	Buccal DNA, PA isolates, Serum

Study Design

Study Type?	Observational
Randomized Study?	No
Placebo Controlled?	No
Length of Participation	5 Years
Number of Study Visits?	5

Additional Information

Phase?	Not Applicable
Study Sponsor?	Rosenfeld, Margaret
Study Drugs?	N/A

Eligibility

Age	Less than 12 Years
Mutation(s)	No Mutation Requirement
FEV1% Predicated	No FEV1 Limit
PA Status	Negative
Other	Subjects eligible for this trial will have had no prior isolation of Pa from respiratory cultures (documented as negative in at least 1 culture in 24 months prior to enrollment), or if prior isolation of Pa from respiratory cultures, at least a two-year history of Pa negative cultures. In addition, patients enrolled in the EPIC Clinical trial will automatically be enrolled in the EPIC Observational trial after completion of EPIC Clinical.

Study Results

PRIMARY FINDINGS:

EFFECTIVENESS:

The data evaluated for this publication included 889 children with CF =12 years of age from the EPIC Observational Study who had no isolation of Pa from respiratory cultures. The primary endpoint for the analysis was age at initial Pa acquisition, defined as the age at first isolation of Pa from a clinically-collected respiratory culture. CFTR mutations with minimal function were associated with earlier Pa acquisition compared to mutations with residual function; the median age at Pa acquisition was 2.9 years among participants with minimal CFTR function vs.10.3 years for those with residual CFTR function (hazard ratio (HR) comparing minimal to residual CFTR function 2.87 (95% CI 1.88, 4.39)). Home environmental exposure as possible risk factors was evaluated. None of these factors, including cigarette smoke, hot tub use, breastfeeding, or daycare attendance, was associated with age at initial Pa acquisition. Newborn screening was not associated with age at Pa acquisition. Key associations were validated in a CF Foundation National Patient Registry replication cohort.

SAFETY:

Because this was an observational study no safety measures were applicable.

CITATION:

Pediatr Pulmonol 2010,45(9):934-44, J Cyst Fibros 2012, Nat Genet 2012,44(8):886-891, Pediatr Pulmonol,DOI 10.1002

For more information about the results of this study and where it was conducted, visit ClinicalTrials.gov.

Five Year Extension Study to Evaluate Risk Factors for and Inpact of P. aeruginosa Acquisition (EPIC-002 (Extension))

Summary

This observational study was conducted to learn what may lead to lung infections caused by Pseudomonas aeruginosa (Pa) in children with CF and what the impact of those infections may be. The original five year study has been extended to allow information to be collected about lung infections, symptoms, and bacteria for up to 10 years in children who enroll in the study. Participants who participated in this study and had Pa isolated during the study and fulfilled eligibility criteria were had the option to enroll in the EPIC clinical trial.

Specimen Information

Status: Specimens are Available

This study represents a 5 year extension to the original EPIC Observational study. Blood was again collected annually (Years 6 - 10) and OP cultures were obtained annually with any isolated P. aeruginosa send to Seattle Children's for Banking.

Visit #	Time From Baseline	Specimens Collected
7	+6 Years	PA isolates, Serum
8	+7 Years	PA isolates, Serum
9	+8 Years	PA isolates, Serum
10	+9 Years	PA isolates, Serum
11	+10 Years	PA isolates, Serum

Study Design

Study Type? Observational
Randomized Study? No
Placebo Controlled? No
Length of Participation 5 Years
Number of Study Visits? 5

Additional Information

Phase? Not Applicable
Study Sponsor? Rosenfeld, Margaret

Study Drugs?	N/A

Eligibility

Age	Less than 12 Years
Mutation(s)	No Mutation Requirement
FEV1% Predicated	No FEV1 Limit
PA Status	Not Applicable
Other	This study is an extension of the EPIC Observational study.

Study Results

PRIMARY FINDINGS:

EFFECTIVENESS:

Risk factors for age at first Pa-positive respiratory cultures were evaluated in 889 children with CF, age = 12 yc who participated in the EPIC OBS study and had no isolation of Pseudomonas aeruginosa (Pa) prior to and within 120 days after enrollment. Risk factors associated with age at Pa acquisition included CFTR mutations with minimal function (both mutations in functional class 1, 2, or 3) vs residual function (at least one mutation in functional class four or five) at median age of 2.9 years vs 10.3 years. Risk factors of breastfeeding, daycare attendance, hot tub use, cigarette smoke, or wood burning stoves were not associated with age at initial Pa acquisition.

SAFETY:

Because this was an observational study no safety measures were applicable.

CITATION:

J Cyst Fibros 2012,11(5):456-7, J Cyst Fibros 2014,13(5):542-549

For more information about the results of this study and where it was conducted, visit ClinicalTrials.gov.

Study to Evaluate Risk Factors for and Impact of P. aeruginosa Acquisition (Years 11-15) (EPIC-002 (Years 11-15))

Summary

This observational study is being conducted to learn what may lead to lung infections caused by Pseudomonas aeruginosa (Pa) in children with CF and what the impact of those infections may be. The original five year study has been extended to allow information to be collected about lung infections, symptoms, and bacteria for up to 15 years in children who enroll in the study. Participants who participated in this study and had Pa isolated during the study and fulfilled eligibility criteria had the option to enroll in the EPIC clinical trial.

Specimen Information

Status: Specimens are Available

This study represents an additional 5 year extension to the PIC Observational study. Blood was again collected annually (Years 11-15).

Visit #	Time From Baseline	Specimens Collected
12	+11 Years	Buffy coat, EDTA plasma, Serum
13	+12 Years	Buffy coat, EDTA plasma, Serum
14	+13 Years	Buffy coat, EDTA plasma, Serum
15	+14 Years	Buffy coat, EDTA plasma, Serum
16	+15 Years	Buffy coat, EDTA plasma, Serum

Study Design

Study Type? Observational
Randomized Study? No
Placebo Controlled? No
Length of Participation 5 Years
Number of Study Visits? 5

Additional Information

Phase? Not Applicable

Study Sponsor?	Rosenfeld, Margaret
Study Drugs?	N/A

Age	Less than 17 Years
Mutation(s)	No Mutation Requirement
FEV1% Predicated	No FEV1 Limit
PA Status	Not Applicable
Other	Must have participated in EPIC Observational Study.

Study Results

STUDY RESULTS NOT YET AVAILABLE