CTSA Clinical & Translational [®] Science Awards

Visit CTSAcentral.org to learn more

Confidential

CC-CHOC Pediatric Point Person Project (P4) Protocol Information Form

Follow this link to indicate your interest in Protocol #3 Bronchitis https://redcap.ctsacentral.org/surveys/?s=7Gifps

Submitted March 30, 2012

Participant ID #3 Bronchitis

Sponsor Individual Investigator

Study Title Collaboration to Improve Knowledge and Treatment of Plastic Bronchitis in Children

Target Population Plastic bronchitis (PB) is a rare but most often pediatric disease characterized by the formation and expectoration of exudative fibrin airway "casts." Patients can present with cough, dyspnea, fever, wheezing, and persistent pulmonary obstruction which can lead to death. PB seems to be most common in children with underlying congenital heart disease (CHD) who have undergone surgical palliation with the Fontan procedure. However, PB has been reported in children with sickle cell disease, asthma, and cystic fibrosis and it can occur in adults with no remarkable pulmonary or cardiac medical history; we refer to this as idiopathic PB. Presently, the pathogenesis of PB is poorly understood and there is no known effective treatment or cure. In addition, it is unknown whether PB cast composition is consistent across the range of patients that carry the diagnosis.

We recently learned that in PB patients with underlying CHD, casts are consistently comprised of fibrin with remarkable cellular content. We think that cast content could provide important and needed clues about PB pathogenesis. As such, our presently funded research, is aimed, in part, at generating data about PB cast composition so that we may learn about processes that may be involved in cast formation.

In addition, because we often use inhaled tissue plasminogen activator (tPA) to treat PB we are working towards improving our knowledge about the behavior of exogenous tPA in the lungs so that rational and safe dosing schemes can be developed for children with PB. Collectively, we think that this work could have broad implications in a range of inflammatory-fibrin lung diseases including asthma and advance our understanding of pulmonary drug delivery in children.

Study Objectives 1) To more fully characterize PB airway cast composition across a broad range of pediatric patients so that we can improve understanding of disease pathogenesis

2) To test the safety and efficacy of inhaled tPA for the reduction of airway PB cast burden.

Key Inclusion/Exclusion Criteria Age 6-18 years

Inclusion criteria: Children with symptomatic active fibrin airway cast PB who can use a nebulizer.

Exclusion criteria: Known contraindications to inhaled tPA, clinical need for bronchoscopic removal of PB cast, and/or hemodynamic instability.

CTSA Clinical & Translational [®] Science Awards

Visit CTSAcentral.org to learn more.

Confidential

Short Overview of study Design 1. Clinical trial proposal- we would like to collaborate on the design of a clinical trial that would test the safety and efficacy of tPA in children with active (cast-producing) PB.

2. Study participant identification- we would like assistance in identifying children with PB for our current cast composition study. Presently, we are looking for post-Fontan children but as we move forward would like to expand to encompass a broader range of pediatric patients.

3. Grant proposal development- our work in PB is presently funded by an R15 from NICHD that supports our studies in a small number of children. It is insufficient to support the funding of a multiple center clinical trial of inhaled tPA. Therefore, we foresee that the clinical trial proposal would be part of a larger grant application.

Study Synopsis We recently learned that in PB patients with underlying CHD, casts are consistently comprised of fibrin with remarkable cellular content. We think that cast content could provide important and needed clues about PB pathogenesis. As such, our presently funded research, is aimed, in part, at generating data about PB cast composition so that we may learn about processes that may be involved in cast formation. In addition, because we often use inhaled tissue plasminogen activator (tPA) to treat PB we are working towards improving our knowledge about the behavior of exogenous tPA in the lungs so that rational and safe dosing schemes can be developed for children with PB. Collectively, we think that this work could have broad implications in a range of inflammatory-fibrin lung diseases including asthma and advance our understanding of pulmonary drug delivery in children.

Total Number of Patients to be Enrolled 15-20

Enrollment Period TBD

Miscellaneous Details/Requirements 1. Clinical trial proposal- we would like to collaborate on the design of a clinical trial that would test the safety and efficacy of tPA in children with active (cast-producing) PB.

2. Study participant identification- we would like assistance in identifying children with PB for our current cast composition study. Presently, we are looking for post-Fontan children but as we move forward would like to expand to encompass a broader range of pediatric patients.

3. Grant proposal development- our work in PB is presently funded by an R15 from NICHD that supports our studies in a small number of children. It is insufficient to support the funding of a multiple center clinical trial of inhaled tPA. Therefore, we foresee that the clinical trial proposal would be part of a larger grant application.

Follow this link to indicate your interest in Protocol #3 Bronchitis https://redcap.ctsacentral.org/surveys/?s=7Gifps

Any question? Email ctsa_childhealth@ctsaC4.org