Current Clinical Trials at UNC

Mucus Clearance in Small Airways
The goal of this clinical trial is to develop an effective method of measuring mucus clearance in the small airways of the lungs. It is widely believed that CF lung disease starts in the small airways, and an ability to learn more about those regions and how treatments work there would be beneficial. Patients at least 18 years old with $FEV_1 \geq 40\%$ are eligible. The study requires 8 visits to UNC and study procedures include mucus clearance scans, PFTs, and sputum induction.

MPEX-207
This double-blind, placebo-controlled research study will test a new formulation of levofloxacin (MP-376) that has been developed for aerosol delivery. Study patients will receive 28 days of MP-376 or placebo, delivered twice a day via an eFlow nebulizer. Study procedures include PFTs, blood tests, sputum collection, and symptom diaries. Patients must be at least 12 years old, have an FEV_1 between 25 and 85% of predicted, have *Pseudamonas aeruginosa* grow in their sputum culture, and have taken at least three 28-day cycles of an inhaled antibiotic in the past year. The research study requires 6 visits to UNC.

VX09-809-102
This double-blind, placebo-controlled research study tests two oral investigational drugs that aim to fix the dysfunctional protein in CF patients. VX-809 is administered alone for 14 days followed by co-administration with VX-770 for 7 days. Study procedures include sweat chloride testing, blood tests, and PFTs. Patients at least 18 years old, with ΔF508/ΔF508 genotype and $FEV_1 \geq 40\%$ are eligible. The research study requires 6 visits to UNC, including 2 overnight stays in the hospital's research unit.

The contact for the studies listed above is: Nadia Bendahmane (nadiab@med.unc.edu; 919-966-9198).

All text regarding these research studies has been approved by the UNC Biomedical IRB.

NEW LEGISLATION: CONGRESS CHANGES TAX RULES FOR STUDY SUBJECT REIMBURSEMENT

The Improving Access to Clinical Trials Act became law on April 3, 2011, after many efforts from the CF Foundation and other advocates. It allows patients with rare diseases, such as CF, who receive SSI assistance or Medicaid (discussed on page 3) to exclude clinical trial compensation for the first $2000 per calendar year from their counted income and resources. This means that receiving compensation up to $2000 can not negatively affect your benefits by increasing your income, making it easier than ever to participate in clinical research! Your CF research coordinators will provide you with the correct paperwork to have on hand when dealing with the SSA. We are excited for this step toward making clinical research more accessible and beneficial for all patients!

More information is available on the SSA website: http://ssa-custhelp.ssa.gov/app/answers/detail/a_id/2198.

UNC CYSTIC FIBROSIS CENTER

Late Spring/Early Summer 2011

Hello from the UNC Cystic Fibrosis Quality Improvement Team! We have a lot of information to share with you, and in this newsletter you'll find news on CF clinical trial results, updates on the home spirometry program, valuable information about Social Security and Medicare benefits, and a bit about the clinical research going on at UNC right now. Enjoy!

CF Drug Development Highlights

These are truly unique and exciting times in CF research! Here is a brief update on some of the most exciting developments in recent months:

VX-770 (Vertex Pharmaceuticals)
The CF Foundation has invested millions of dollars to identify new drugs that could actually improve the function of CFTR – the malfunctioning protein that causes cystic fibrosis. This high-stakes gamble is now starting to pay off through the success of VX-770. VX-770 is a drug, taken by mouth, which is designed to improve the function of certain types of mutant CFTR proteins. Human studies of this drug have only been performed in CF patients with at least one copy of the G551D mutation. Most recently, results from two long-term studies in adults and children (>6 years of age) were reported publicly. Both of these studies confirmed that VX-770 is able to improve CFTR function, as shown by marked reductions in sweat chloride values. Further, patients taking this study medication demonstrated marked improvements in lung function, improved weight gain, and reduced respiratory exacerbations. The magnitude of the improvement in lung function was greater than that observed in any other long-term study of new therapies for CF, making these findings incredibly exciting. Obviously, the first question patients with CF ask about VX770 is "will it work for me?". While we know that VX-770 will not restore the function of the most common CFTR mutation (delta F508) when taken by itself, plans are underway to test the effect on other mutations.

VX-809 (Vertex Pharmaceuticals)
Another drug (VX-809) is being developed in an attempt to help patients with the most common CFTR mutation – delta F508. In a recently reported study, VX-809 was found to be generally safe, but was not able to restore CFTR function in patients with two copies of the delta F508 mutation. There is a strong scientific rationale to expect that combining VX-809 with VX770 could be more effective, however. An international study that tests this combined treatment approach is currently underway.

Dry Powder Mannitol (Pharmaxis)
Pharmaxis has been developing a dry-powder formulation of mannitol (Bronchitol®), which is a type of sugar. Inhaled mannitol is designed to draw water into airway mucus and improve mucus clearance from the lung. This treatment concept is the same as that of hypertonic saline, which is already used by many CF patients. One potential advantage of Bronchitol is that it doesn't require a nebulizer – instead, capsules containing mannitol are dispensed from an inhaler. Although each dose

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Inside this issue:

Home Spirometry: Keep Tabs on Your Health!

Spirometry (PFTs) is a critical part of how doctors assess your lung health. The UNC Adult CF Clinic instituted a Home Spirometry Program more than 2 years ago, with over 100 patients participating. The home spirometer is your early warning device that lets you know when you may need to contact your doctor to initiate an early intervention. The goal of early detection and early intervention is to prevent or minimize future exacerbations.

YOUR HOME SPIROMETER CAN HELP YOU CATCH AN EXACERBATION EARLY!

Since the inception of this program, we are learning how this tool can be used and how it fits into the lives of our patients. One of the striking findings is that less than 50% of patients actually bring their spirometer back to clinic with them, despite phone call reminders to do so prior to each clinic visit. A surprising 40% have never returned with their spirometer, often despite multiple clinic visits since receiving the device. For patients who did bring their spirometer with them, the average use was about once every 2 weeks. An anonymous survey to patients in the program let us know that one major barrier that preventing use of the spirometer related to anxiety over what the numbers would show, while simply forgetting to incorporate this into their routine was another issue.

So, why should you use your home spirometer? Using the home spirometer once a week may provide you with better control of your health and well being. Logging measurements each week will give you the opportunity to identify an unusual decline in PFT measurements before a new infection is full blown. Early detection gives you a chance to initiate an early intervention. PFT measurements may also help you to know that a new therapy or airway clearance regimen is actually working.

If used regularly, you will learn about your own pattern of lung function over time, and your home spirometer can be your early warning system. We would encourage you to call us when there is any significant change in PFT measurements. By phone, your CF team may want to modify your medications and recommended treatment, and can recommend an appropriate follow up visit.

We thank all of the patients who are participating in this program, and hope that it can make a difference in your health!

CF Drug Development Highlights

continued from page 1 requires the inhalation of 10 capsules, a substantial time savings can be gained when compared to a standard nebulizer treatment with hypertonic saline. Two long-term trials have been completed recently, and both showed an improvement in lung function during 6 months of placebo-controlled treatment. Based upon the results of these studies, Bronchitol was approved for use in Australia, and is undergoing review in Europe and the United States. Whether hypertonic saline or Bronchitol is preferable in a particular patient will need to be addressed individually (if approved in the US), although some differences in the likelihood of side effects (cough, wheezing) and amount of expected protection against disease exacerbations might guide this decision, in addition to patient preferences over the method of delivery (nebulizer versus inhaler).

Denufosol (Inspire Pharmaceuticals)

Denufosol is an inhaled drug that is designed to increase the secretion of liquid into the airway and improve mucus clearance. The initial phase 3 study (the final phase before FDA approval) suggested that Denufosol improved lung function in patients with mild lung disease when compared to placebo treatments over 6 months. Unfortunately, a subsequent 1 year study in similar patients with mild lung disease revealed no benefits to lung function, exacerbation frequency, or symptoms. Unfortunately, these results may end the development program for this drug.

Social Security: What is it and When Should I Apply?

What does it mean to be "disabled?" According to the Social Security Act, "a person is considered disabled when he or she is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months."

There are two types of social security disability: Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI).

There are 3 medical criteria related to CF that will meet the requirements of Social Security. A person with CF must meet only 1 one of these criteria:

1) *A certain Forced Expiratory Volume in one second (FEV1). Less than 50%*
2) *3 hospitalizations in a one year time period or have needed the intervention of a physician 6 times in a year for CF exacerbations.*
3) *Persistent pulmonary infection occurring at least once every 6 months and requires intravenous or nebulized antimicrobial therapy.*

Social Security Disability Insurance (SSDI) requires a person to meet both the medical and work requirements. A person's disability benefit is based on the amount of time they have worked and the money paid into the Social Security fund. **Your CF care team cannot determine if you have worked enough to qualify for SSDI. Only Social Security can determine this.** SSDI requires that a 5 month waiting period be met before payment of benefits begins, beginning on the last day a person worked. If a person is approved for SSDI, then he or she qualifies for Medicare (health insurance), however it is a 2 year waiting period from the time that a person is approved for SSDI. This means that once approved, an individual will have a waiting period of at least 2 years and 5 months before receiving Medicare.

Supplemental Security Income (SSI) requires that a person meet both the medical and income criteria. The income limit for SSI varies in each state. In North Carolina, a person's yearly income cannot exceed $10,890 (if single) and $14,710 (if married). Income a spouse receives is counted, as is child support. Resources or assets are also counted toward SSI, including: real estate, bank accounts, cash, stocks, bonds, etc. You may have resources worth up to $2000 for an individual and $3000 for a couple. Resources that are not counted against a person include: a home and the land it is on, one car, and life insurance policies with a face value less than $1,500. If a person qualifies for SSI, he or she automatically qualifies for Medicaid (health insurance) in North Carolina. Some states require a separate Medicaid application after qualifying for SSI.

When should I apply for social security disability? Each person is different when deciding when the right time is. If you are considering applying for social security disability, talk with your CF care team to help guide you through the process. Unfortunately there is no way around the medical criteria; you must meet one of the medical criteria to qualify for social security disability. When applying for social security disability for the first time, there is a free service that will assist with the disability application. It is called the **Insurance Access Project and is administered by the CF Legal Group (Beth Sufian). If you are applying for disability for the first time, you may be able receive help with your application by calling 800-622-0385.**

**Please remember that the social security disability application is a long process. The length of time it takes to receive a decision on your disability claim can take anywhere from 3-5 months. This applies to both SSDI and SSI. Also, it is not uncommon to be denied for disability the first time applying in which case, the decision will need to be appealed.*

**If you have further questions regarding social security disability, please contact the CF social worker (Jennifer Pagel) at 919-966-7873 or email at jpagel@unch.unc.edu.*