

Cystic Fibrosis Research News

Title:

What is the value of lung function testing in infants with cystic fibrosis?

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What was your research question?

Can lung function testing in infants with cystic fibrosis, predict lung function in early school age?

Why is this important?

Lung function testing using spirometry is routinely done in school age children, but also possible in infants using a technique named the “raised volume rapid thoracoabdominal compression” technique. For this, infants are helped to sleep using medications and a jacket is wrapped around their body that can be inflated and will make them blow out air rapidly. This test is available at only a few centers and it is currently unclear, how helpful routine testing is to monitor lung disease in infants.

What did you do?

47 infants with cystic fibrosis were tested using this technique at The Hospital for Sick Children – Toronto, and were followed until they reached an age where they were able to perform spirometry.

What did you find?

We found that the results in infancy (age 0-2) cannot predict the results later in life. Only 4 infants were found to have abnormal test results in infancy, and of these 4, only 1 remained abnormal at school age. Infants were also divided into 3 groups – those improving lung function from infancy to childhood, those remaining stable and those that got worse. The patients in these groups were not different in their characteristics, like gender, ethnicity and genetic mutation and neither were they different in the amount of chest infections experienced between the 2 tests. Interestingly, 6 participants were found to have significantly



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abnormal lung function in childhood. These patients had more exacerbations after the day of infant testing compared to those with normal function in school age.

What does this mean and reasons for caution?

The fact that infant testing could not predict lung function in later age is probably caused by the fact that most infants and young children with CF have normal lung function. The testing in infancy was not capable to detect abnormal lung function either because the abnormalities were very mild, or that the deterioration in lung function happened later in life.

What's next?

Supported by other studies, as well as the results of this study, it was concluded that there is no evidence to suggest a benefit from routinely performing infant pulmonary function testing in CF, and that this test should continue to be used for selective infants or as part of clinical trials. Efforts to find more sensitive ways to capture early lung disease in infants need to be pursued.

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