Background and operational challenges

Cystic fibrosis (CF) affects approximately 70,000 persons worldwide.\(^1\) It has been estimated that currently only 30% of all CF patients participate in clinical trials.\(^2\) Since there is now an unprecedented number of medications in the development pipeline, the competition between sponsors for CF patients to participate in their trials will only increase in the future.

This article explores methodological, practical and ethical challenges frequently experienced by both study participants and research staff, and considerations unique to CF studies. These include: performing sputum induction, pulmonary function tests in pediatric patients, organizing patient (and parent/caregiver) overnight study visits, managing the impact of study visits on school or work schedules, and the hesitancy of CF patients to be involved in clinical trials. CF studies are also distinctive in that many study sites are affiliated with patient advocacy groups, and many adults are still followed by pediatric CF centers, as patients can be reluctant to change their healthcare providers.

For global CF studies, another challenge is that CF patients may not be homogenous across different geographical regions, including standard of care, nutritional status, survival rates and the availability of medications, including off-label usage. For some regions where there is not a CF patient registry, very little information may be available. There also is scant and/or conflicting data regarding the benefit of some treatments and use of some CF therapies is not always evidence-based.

Strategies offering solutions

Recent experience in CF is vital so that one is kept abreast of issues and lessons learned to effectively mitigate against challenges. Novel therapies are now based on an individual's genetic mutation and a personalized treatment approach is likely only to increase. The impact of these new treatments is likely to affect the development of future CF medications. The use of cohort adaptive study designs is relatively common in CF and managing important aspects such as communicating enrollment updates and expectations and organizing safety data reviews and multiple interim analyses is also important. Knowledge of the processes and timeline impact when working with patient advocacy organizations is equally important. Availability of site metrics (including randomization rates, protocol deviations and site audit findings) is important to help ensure overall quality. An additional key element to ensure quality is recent experience working with vendors for spirometry and sputum assessments.

Key take-away messages

- Although conducting clinical trials in CF is challenging, roadblocks experienced can be anticipated and mitigation strategies can be implemented when specific trigger points are experienced.
- The overall goal must be kept in mind – to provide novel medications which improve the life expectancy and the quality of life for CF patients globally.

Because of the unprecedented number of medications in the development pipeline, increased participation of cystic fibrosis patients in clinical trials is of paramount importance.

References

1. Cystic Fibrosis Foundation Web Site [Internet]. Available at: http://www.cff.org/AboutCF/ (Accessed 6 August 2014)