Conference Abstract

A telehealth approach to Cystic Fibrosis management; I-neb Insight Online

Tim Spencer

Ian Rabbetts

Alex Black

Tony Dyche

John Pritchard

Correspondence to: ***Tim Spencer****, E-mail:* submissions@ps5consultants.com

Abstract

Introduction: Cystic Fibrosis (CF) is a chronic disease which, if left untreated, leads to colonization of the lungs by bacteria and irreversible lung damage. Whilst adherence to nebulized treatments by CF patients is typically poor, evidence suggests that electronic adherence monitoring, combined with treatment-related feedback, may aid patients' ability to adhere. [1] I-neb Insight Online is a telehealth-based patient management system, which incorporates monitoring and feedback. It is designed to support patients in taking an active role in their disease management.

I-neb Insight Online comprises a server and software, which analyzes and presents data regarding a patient's use of the I-neb Adaptive Aerosol Delivery (AAD) System. [2] Data are collected by the I-neb AAD System's patient logging system (PLS) and uploaded by the patient to a central server. Here, analysis is performed by I-neb Insight Online software before data are presented as summary graphs, which are available to patients, clinicians, and homecare personnel. Results are plotted against targets for each parameter. If data fail to meet these targets, homecare personnel alert the patient and clinician; this is intended to facilitate timely and personalized resolution of treatment-related issues.

Aims and Objectives: Investigate use of I-neb Insight Online in management of CF patients.

Results: Adults with CF (n=49) were enrolled into a 13-week handling study, for which they agreed to weekly uploads of PLS data. Patients who completed the study were asked to complete questionnaires concerning ease-of-use, usefulness, and their overall opinion regarding the value of I-neb Insight Online.

Ninety-four percent of patients completed the study, during which 68% of expected PLS data uploads were achieved, indicating that CF patients found I-neb Insight Online to be acceptable and were willing to engage with telehealth-based management.

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Patient adherence was calculated as 69.4% of expected treatments taken; 98% of those treatments were compliant with correct use of the I-neb device. True Adherence ([% adherence to prescribed regimen x % compliance with correct use] / 100) was 68%.

All patients who returned questionnaires (n=33) reported the technology to be "very easy" to "acceptable" to use and over 90% had no difficulty with I-neb Insight Online data displays (graphs). Over 80% found the analyzed data, including targets, to be "very useful" to "acceptable" and 73% felt they would benefit from continued use of the system.

Conclusions: I-neb Insight Online provides patients and clinicians with remote access to treatment-related data. The handling study results indicated that the majority of patients found this system to be acceptable and were willing to engage with telehealth-based management. Data summaries and feedback were considered useful by the majority of patients and a high proportion favored continued use of the system; patients particularly valued the opportunity to monitor their own device use. The system has since been made available to all UK patients using the I-neb AAD System and will be available in Europe in the coming months.

1) Nikander, K. et al. Proceedings of Respiratory Drug Delivery. 2012;679-684.

2) Dyche, T. et al. Proceedings of Drug Delivery to the Lungs. 2010;365.

Keywords:

patient logging system, i-neb, insight online, adaptive aerosol delivery, cystic fibrosis

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