

## Cystic Fibrosis-Related Diabetes in Adults: Inpatient Management of 121 Patients during 410 Admissions

Neda Rasouli, M.D.,<sup>1,2</sup> Stacey Seggelke, RN, MS, CDE,<sup>1</sup> Joanna Gibbs, PA-C,<sup>1</sup>  
R. Matthew Hawkins, PA-C,<sup>1</sup> Matthew L. Casciano, Pharm.D.,<sup>3</sup> Elizabeth Cohlma, BS,<sup>1</sup>  
Jennifer Taylor-Cousar, M.D.,<sup>4,5</sup> Cecilia Wang, M.D.,<sup>1,2</sup> Rocio Pereira, M.D.,<sup>1</sup> Elisa Hsia, M.D.,<sup>1</sup>  
and Boris Draznin, M.D., Ph.D.<sup>1</sup>

### Abstract

#### *Background:*

With improved longevity, cystic fibrosis (CF)-related diabetes (CFRD) has emerged as the most common nonpulmonary complication of CF. Patients with CFRD are frequently admitted to the hospital with infections and deterioration of pulmonary function, during which time glycemic control might have an impact on pulmonary function, recovery from infection, and survival.

#### *Methods and Results:*

In an attempt to share our insight into inpatient management of CFRD, this article summarizes the experience of our inpatient glucose management team with hospital management of 121 adult CFRD patients who were hospitalized on 410 occasions at the University of Colorado Hospital between January 2009 and September 2011. This is a retrospective chart review descriptive study of inpatient management of CFRD in our center. Our cohort includes CFRD patients treated with basal and mealtime insulin through multiple daily injections or continuous subcutaneous insulin infusion (CSII), as well as patients receiving steroids or enteral nutrition, which adds complexity to the management of CFRD during hospitalization.

#### *Conclusions:*

Multiple hospitalizations and intensive inpatient management of CF are integral elements of treatment. Inpatient therapy for CFRD requires a customized approach that is uniquely different from that of type 1 or type 2 diabetes. Our experience highlights clinical circumstances such as irregular food intake, high dose steroid therapy, and supplemental tube feeding. For many patients, it is possible to continue CSII therapy during hospitalization through a combination of mutual trust between the patient and hospital staff and oversight provided by the glucose management team.

*J Diabetes Sci Technol* 2012;6(5):1038-1044

**Author Affiliations:** <sup>1</sup>Division of Endocrinology, Diabetes, and Metabolism, Department of Medicine, University of Colorado School of Medicine, Denver, Colorado; <sup>2</sup>Veterans Affairs Eastern Colorado Health Care System, Denver, Colorado; <sup>3</sup>University of Colorado Hospital, Aurora, Colorado; <sup>4</sup>Pulmonary Division, Department of Medicine and Pediatrics, National Jewish Health, Denver, Colorado; and <sup>5</sup>Pulmonary Division, Department of Medicine, University of Colorado School of Medicine, Denver, Colorado

**Abbreviations:** : (C) carbohydrate, (CF) cystic fibrosis, (CFRD) cystic fibrosis-related diabetes, (CSII) continuous subcutaneous insulin infusion, (GMT) glucose management team, (I) insulin, (NPH) neutral protamine Hagedorn, (SD) standard deviation, (UCH) University of Colorado Hospital

**Keywords:** cystic fibrosis, diabetes, glycemic control, inpatient management

**Corresponding Author:** Boris Draznin, M.D., Ph.D., Anschutz Medical Campus MS 8106, 12801 East 17th Ave, Aurora, CO 80045; email address [Boris.Draznin@ucdenver.edu](mailto:Boris.Draznin@ucdenver.edu)