

Chronic Obstructive Pulmonary Disease

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Effects of ICS in combination with LABA on improving symptoms and lung function in COPD with airway eosinophilia

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Rationale: Eosinophil inflammation in the airways is observed in some patients with chronic obstructive pulmonary disease (COPD) independent of asthma. However, little is known about not only mechanisms but also therapy in this clinical phenotype of COPD. This clinical study was designed to determine whether inhaled glucocorticosteroids (ICS) are useful for airway eosinophilia in COPD.

Methods: Once-daily inhalation of indacaterol (LABA) was firstly administrated to the patient with COPD. After symptoms were stable, sputum examination was done. When a percentage of eosinophil in the induction sputum is >3%, once-daily inhalation of ciclesonide (ICS) was administered.

Results: 20 patients with COPD (GOLD 2-3) with airway eosinophilia were enrolled. After administration of indacaterol, COPD Assessment Test (CAT) score was decreased from 15.1 to 7.9 ($P<0.05$), and frequency of SABA on demand for symptom relief was also decreased from 1.6 to 0.8 puffs/week ($P<0.05$). In lung function test, forced expiratory volume in 1 sec (FEV_1) and inspiratory capacity (IC) were increased by 210.0 ($P<0.05$) and 311.5 mL ($P<0.01$), respectively. After addition to ciclesonide, values of CAT score and frequency of SABA were markedly decreased to 4.9 points and 0.3 puffs/week, respectively (each $P<0.05$ vs. LABA). Moreover, FEV_1 and IC were further increased by 147.0 and 227.6 mL, respectively (each $P<0.05$ vs. LABA).

Conclusions: Not only LABA but also ICS is needed to improve lung function and to achieve better maintenance in COPD with airway eosinophilia. Ciclesonide is effective for these cases. Eosinophil infiltration to airways may be indication of ICS therapy for COPD.

Biography

Hiroaki Kume has obtained his MD from Toyama Medical and Pharmaceutical University in 1982. He has completed his PhD in Department of Medicine (II), Nagoya University School of Medicine in 1990 and Postdoctoral studies from School of Veterinary Medicine, University of Pennsylvania. Currently, he works at Department of Respiratory Medicine and Allergology, Kindai University Faculty of Medicine and Department of Respiratory Medicine, Rinku General Medical Center, Izumisano City, Osaka, Japan and focuses on investigating the characteristics of COPD with the goal of rational therapy for COPD.

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