慢性氣道疾病生物製劑治療-最新進展

Biologic Agents in Chronic Airway Disease – The Recent Advances

時　　間：115 年 6 月 27 日(星期六) 08:30~12:00
地　　點：臺北榮民總醫院 致德樓第 8、9 會議室

08:25-08:30	***Opening Remarks***	陽光耀教授 Kuang-Yao Yang
	座長：彭殿王 教授 (Diahn-Warng Perng)	
08:30-09:15	氣道與全身性免疫疾病：嗜酸性肉芽腫性多血管炎、過敏性支氣管肺麴菌病及慢性鼻竇炎合併鼻息肉 Airway-Systemic Immune Diseases: EGPA, ABPA, and CRSwNP	陳威志醫師 Wei-Chih Chen
09:15-10:00	嚴重氣喘：內型驅動之精準治療 Severe Asthma: Endotype-Driven Precision Therapy	蕭逸函醫師 Yi-Han Hsiao
10:00-10:30	***Coffee Break***	
	座長：馮嘉毅 教授 (Jia-Yih Feng)	
10:30-11:15	肺阻塞的典範轉移：生物製劑作為治療新領域 A paradigm Shift in COPD: Biologics as the New Frontier	羅柏鈞醫師 Po-Chun Lo
11:15-12:00	未來方向：新興標靶、生物標記與精準醫療之臨床實踐 Future Directions: Emerging Targets, Biomarkers, and Precision Implementation	蘇剛正醫師 Kang-Cheng Su

Airway-systemic immune diseases: EGPA, ABPA, and CRSwNP

氣道與全身性免疫疾病：嗜酸性肉芽腫性多血管炎、過敏性支氣管肺麴菌病及慢性鼻竇炎合併鼻息肉

Wei-Chih Chen

陳威志

Division of Respiratory Therapy, Department Chest Medicine, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

Insitute of Emergency and Critical Care Medicine, College of Medicine, National Yang Ming Chiao Tung University, Taipei, Taiwan, ROC

臺北榮民總醫院 胸腔部 呼吸治療科　國立陽明交通大學 急重症醫學研究所

Airway-systemic immune diseases encompass overlapping type 2 inflammatory disorders that link the upper and lower airways with systemic eosinophilic immune activation. Eosinophilia, IgE-related pathways, epithelial dysfunction, and bronchial–sinonasal crosstalk are central features across eosinophilic granulomatosis with polyangiitis (EGPA), allergic bronchopulmonary aspergillosis (ABPA), and chronic rhinosinusitis with nasal polyps (CRSwNP). The concept of the respiratory tract as a single organ helps explain their frequent coexistence and shared therapeutic targets.

EGPA represents the systemic end of this spectrum, typically evolving from a prodromic phase marked by asthma and rhinosinusitis to eosinophilic tissue infiltration and finally multisystem vasculitis. Asthma occurs in more than 90% of patients, while chronic sinusitis and nasal polyps are also common. Marked blood eosinophilia and multiorgan involvement distinguish EGPA from airway-limited disease.

ABPA is an airway-centered hypersensitivity disorder that complicates asthma or cystic fibrosis and commonly presents with poorly controlled asthma, eosinophilia, elevated total and Aspergillus-specific IgE, mucoid impaction, and bronchiectasis. Current management targets both inflammation and fungal burden, using oral corticosteroids or itraconazole-based therapy for acute disease, with alternative antifungals or biologics considered in selected patients.

CRSwNP is a common type 2 inflammatory comorbidity of asthma and contributes substantially to symptom burden and disease severity. It is associated with asthma in 20%–60% of cases, and about two-thirds of patients show type 2 inflammation. Optimized medical therapy, surgery, and biologics can improve nasal and asthma outcomes.

EGPA, ABPA, and CRSwNP should be viewed as related airway-systemic immune diseases requiring early recognition, endotype-based evaluation, and multidisciplinary management.

Severe asthma: Endotype-driven precision therapy

嚴重氣喘:內型驅動之精準治療

Yi-Han Hsiao

蕭逸函

Division of General Chest Medicine, Department of Chest Medicine, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

臺北榮民總醫院 胸腔部 一般胸腔科

Severe asthma remains a major global health burden, characterized by high morbidity, recurrent exacerbations, and frequent dependence on oral corticosteroids (OCS). Management has shifted from a one size fits all approach to endotype driven precision therapy. This presentation reviews current targeted treatments, the evolving clinical goal of remission, and emerging next generation strategies that may close today's outcome gaps.

Precision care begins with identifying inflammatory endotypes, particularly Type 2 (T2) high and T2 low asthma. We highlight the practical value of core biomarkers including blood eosinophil count (BEC), fractional exhaled nitric oxide (FeNO), and serum IgE for selecting approved biologics targeting IgE, IL 5 or IL 5R, IL 4Rα, and TSLP. These therapies reduce exacerbations and OCS exposure, improve symptom control, and help stabilize lung function. However, approximately 60 to 70% of patients do not achieve clinical remission, defined as no exacerbations, no OCS use, stable lung function, and well controlled symptoms, underscoring an important unmet need and ongoing challenges. Achieving deeper response requires earlier intervention to limit irreversible airway remodeling and systematic management of high impact comorbidities that often share T2 pathways, such as chronic rhinosinusitis with nasal polyps and obesity.

This presentation also introduces emerging therapies designed to extend benefits beyond first generation biologics. These include ultra long-acting agents such as depemokimab dosed twice yearly and bispecific approaches such as lunsekimig targeting TSLP and IL 13. We also briefly survey novel mechanisms under investigation, including OX40 or OX40L modulation, BTK inhibition, and JAK inhibition for T2 low or refractory disease.

Overall, severe asthma care is moving from control to remission through biomarker guided selection, proactive comorbidity management, and next generation multi pathway strategies.

A paradigm shift in COPD: Biologics as the new frontier

肺阻塞的典範轉移：生物製劑作為治療新領域

Po-Chun Lo

羅柏鈞

Department of Internal Medicine, Taoyuan General Hospital, Ministry of Health and Welfare, Taoyuan, Taiwan, ROC.

部立桃園醫院 胸腔內科

The management of Chronic Obstructive Pulmonary Disease (COPD) has traditionally relied on a standardized escalation of inhaled bronchodilators and corticosteroids. However, despite adherence to maximal Triple Therapy (LAMA/LABA/ICS), a distinct subgroup of patients continues to experience frequent exacerbations and significant morbidity. This persistence of residual risk underscores the limitations of the current "one-size-fits-all" paradigm and necessitates a transition toward precision medicine.

This presentation explores the reclassification of COPD as a heterogeneous syndrome driven by specific "treatable traits." Central to this shift is the identification of Type 2 inflammation—manifesting as eosinophilia—in approximately 20% to 40% of the COPD population. For this phenotype, biologic therapies targeting Interleukin-5 (IL-5) and the IL-4/13 pathways provide a mechanism-based intervention distinct from broad-spectrum immunosuppression.

We will review pivotal clinical data demonstrating the efficacy of monoclonal antibodies in reducing annualized exacerbation rates and symptoms burden. Crucial to this therapeutic success is biomarker-directed patient selection. The discussion will emphasize the utility of blood eosinophil counts as a predictive biomarker to identify high-risk patients who remain uncontrolled on standard regimens.

In conclusion, the integration of biologics marks a fundamental evolution in COPD care, moving from reactive symptom management to targeted, disease-modifying strategies. By addressing specific inflammatory endotypes, this approach optimizes therapeutic regimens and directly addresses the unmet needs of vulnerable patient populations.

Future directions: Emerging targets, biomarkers, and precision implementation

未來方向：新興標靶、生物標記與精準醫療之臨床實踐

Kang-Cheng Su

蘇剛正

Department of Chest Medicine, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

臺北榮民總醫院 胸腔部

The clinical management of chronic airway diseases is undergoing a paradigm shift toward endotype-driven precision medicine. This presentation explores the next generation of biological therapeutics poised to redefine respiratory care.

A major transition is occurring in COPD, with the validation of Type-2 inflammatory phenotypes enabling the first biological approvals. Future development focuses on broader targets, including epithelium-derived "alarmins" such as the IL-33/ST2 axis, to address molecular heterogeneity.

Innovation is increasingly centered on bispecific antibodies designed to simultaneously inhibit synergistic inflammatory pathways, such as those targeting IL-4Rα and IL-5. Furthermore, the introduction of ultra-long-acting agents that enable twice-yearly dosing addresses treatment burden and improves patient adherence. Beyond asthma and COPD, novel agents are now targeting neutrophilic pathways in conditions like bronchiectasis.

Ultimately, these advancements support the "treatable traits" model, which emphasizes individual biomarker profiles over traditional diagnostic labels. This strategic shift from symptom management to true disease modification and clinical remission marks a new era in personalized respiratory medicine.