5th September 2026



ERS Highlights & Insights

INDIAN CONTEXT

DAILY NEWS UPDATES
FROM ERS CONGRESS 2026

5th – 9th September 2026



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THE EUROPEAN RESPIRATORY SOCIETY (ERS) CONGRESS 2026 | 5–9 SEPTEMBER | BARCELONA, SPAIN

Anti–IL-5 Pathway Therapy Leads to Marked Reductions in Circulating Eosinophil Activation and Selective Changes in Remodeling-Related Biomarkers in Severe Eosinophilic Asthma

Six months of treatment with anti-interleukin-5 (IL-5) pathway biologics produces sweeping reductions in circulating eosinophil activity alongside meaningful, but more selective, changes in biomarkers linked to airway remodeling, according to a prospective study presented at the Congress. Researchers followed 30 patients with severe eosinophilic asthma who were started on either mepolizumab (n=16) or benralizumab (n=14), assessing clinical status and blood biomarkers at baseline and again at six months.

All patients met strict baseline eligibility criteria for severe asthma, including at least two oral-corticosteroid (OCS)-treated exacerbations in the preceding year, poor symptom control (ACQ greater than 1.5) and reduced quality of life (mini-AQLQ below 5.0), while being free of maintenance OCS use and recent exacerbations.

Clear clinical gains

By month six, lung function and patient-reported outcomes improved substantially. Mean FEV1 rose by 0.26 litres (95% CI 0.11 to 0.40), the Asthma Control Questionnaire (ACQ) score fell by 1.72 points (95% CI -2.04 to -1.39), and the mini Asthma Quality of Life Questionnaire (mini-AQLQ) score increased by 1.97 points (95% CI 1.58 to 2.36). Mean daily oral corticosteroid dose fell by 1.83 mg/day (95% CI -2.46 to -1.21), reflecting a marked steroid-sparing effect.

Eosinophil markers fall sharply, remodeling markers shift selectively

The most dramatic biomarker change was in blood eosinophil counts, which fell by a geometric mean of 97.2% (95% CI -98.7 to -93.9). Circulating eosinophil-derived neurotoxin (EDN) dropped by 81.5% (95% CI -86.8 to -74.0), and galectin-10 fell by 36.8% (95% CI -53.1 to -14.7). Eotaxin-1, by contrast, showed no significant change (-2.4%, 95% CI -21.0 to 20.5).

Among remodeling-associated biomarkers, reductions were smaller and confined to selected mediators: transforming growth factor (TGF)-β1 fell by 22.2% (95% CI -30.2 to -13.3), TGF-β2 by 11.6% (95% CI -18.3 to -4.2), and matrix metalloproteinase (MMP)-10 by 7.5% (95% CI -11.9 to -3.0). No significant changes were observed for tenascin-C, TIMP-1, MMP-9, periostin or fibulin-1.

What it means

The authors conclude that six months of anti-IL-5 pathway therapy is associated with substantial improvements in asthma control, quality of life and lung function, together with a marked reduction in mean daily OCS dose. Treatment was accompanied by pronounced reductions in circulating eosinophils and eosinophil-related biomarkers, while changes in circulating remodeling-associated biomarkers were smaller and limited to selected mediators — suggesting that biologic therapy's effects on airway remodeling pathways may be more targeted than its effects on eosinophilic inflammation.

Reference: Damiański P, Kumor-Kisielewska A, Białas AJ, Kuna P, Kupczyk M. Anti–IL-5 pathway therapy leads to marked reductions in circulating eosinophil activation and selective changes in remodeling-related biomarkers in severe eosinophilic asthma. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

IL-37 Suppresses Extracellular Matrix Deposition in Asthma via Reciprocal Regulation of IL-33

New preclinical research suggests that interleukin-37 (IL-37), a cytokine known for its broad anti-inflammatory effects, can suppress the excessive extracellular matrix (ECM) deposition that drives airway remodeling in asthma — and that this protective action can be reversed by interleukin-33 (IL-33). Subepithelial ECM deposition is a hallmark of chronic asthma, contributing to lung function decline and poor response to standard therapies.

A mouse model of remodeling

Investigators established a prolonged ovalbumin (OVA)-challenge model of airway remodeling in C57BL/6 mice, then treated some animals with IL-37 alone or with IL-37 plus IL-33. Compared with OVA-exposed controls, IL-37 markedly inhibited the hallmarks of remodeling: inflammatory cell infiltration, mucus hypersecretion, Masson-stained (collagen) area, and thickening of the airway smooth muscle (ASM) layer as measured by α-smooth muscle actin staining. Co-administration of IL-33 reversed these protective effects.

Collagen, fibronectin curbed by IL-37

Further analysis of specific ECM proteins showed that IL-37 significantly reduced deposition of Collagen I, Collagen III and fibronectin in lung tissue of the remodeling model, changes that were mitigated when IL-33 was co-administered.

Confirmation in cell co-culture

To probe the cellular mechanism, the team co-cultured Der p1 (house dust mite allergen)-treated airway epithelial cells (AECs) with airway smooth muscle cells (ASMCs). Der p1-treated AECs significantly promoted the proliferation and migration of ASMCs — an effect that IL-37 was able to inhibit. IL-37 also reduced ECM protein secretion by ASMCs following co-culture with AECs, while IL-33 significantly blocked this inhibitory action.

What it means

The authors conclude that IL-37 attenuates asthmatic ECM deposition through a reciprocal regulatory relationship with IL-33, and that the interplay between the two cytokines governs ECM protein secretion by AEC-activated ASMCs. The findings point to the IL-37/IL-33 axis as a potential therapeutic target for limiting airway remodeling in asthma.

Reference: Wang Q, Yao Y, Zhou J. IL-37 suppresses extracellular matrix deposition in asthma via reciprocal regulation of IL-33. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

Targeting Macrophage Ferroptosis to Disrupt CD4+ Tissue-Resident Memory T Cell Generation in Allergic Airway Inflammation

A form of iron-dependent cell death in lung macrophages — ferroptosis — may be a critical, previously unrecognised bridge linking innate allergen exposure to the chronic, self-sustaining immune memory that drives recurrent allergic asthma attacks, according to new murine research presented at the Congress.

Birch pollen (Bet v 1) is a major trigger of allergic asthma, and CD4+ tissue-resident memory T cells (Trm) in the lung are known to drive chronic exacerbations. However, the innate immune checkpoints that initiate this adaptive memory had remained unclear. Using murine models of allergic airway inflammation together with bone marrow-derived macrophages (BMDMs), the investigators evaluated whether macrophage ferroptosis links innate allergen stress to Trm-mediated memory.

Ferroptosis triggered by allergen, blocked by Fer-1

Exposure to Bet v 1 induced macrophage ferroptosis, evidenced by elevated lipid reactive oxygen species (ROS) and Fe2+, both in vitro and in vivo.

Pharmacological inhibition of ferroptosis with Ferrostatin-1 (Fer-1) attenuated airway inflammation and prevented the expansion of lung CD4+ Trm cells.

A PI3K-AKT-Rac1 and STAT1 mechanism

Mechanistically, ferroptotic stress enhanced macrophage phagocytosis and MHC-II-mediated antigen presentation through the PI3K-AKT-Rac1 signalling pathway. STAT1 was identified as a coregulator of both ferroptosis and MHC-II expression. Adoptive transfer experiments and in vitro assays, including use of MHC-II-deficient (H2-Ab1-/-) macrophages, confirmed that pathogenic Trm proliferation required direct, MHC-II-dependent contact with ferroptotic macrophages.

What it means

The authors conclude that macrophage ferroptosis serves as a critical bridge between innate allergen exposure and chronic adaptive immune memory. Targeting the macrophage ferroptosis-STAT1-Trm axis disrupts pathogenic antigen presentation, they suggest, offering a promising therapeutic strategy for chronic allergic asthma.

Reference: Zhang Q, Yan J. Targeting Macrophage Ferroptosis to Disrupt CD4+ Tissue-Resident Memory T Cell Generation in Allergic Airway Inflammation. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

Are the Mucus Plugs Clinically Relevant in Adults With Chronic Cough?

Mucus plugs, airway obstructions long associated with asthma, COPD and asthma-COPD overlap, are also common in adults suffering from chronic cough — appearing in roughly one in four such patients undergoing chest CT — a retrospective Polish study has found. Whether these plugs carry clinical significance in chronic cough, however, remains only partly answered.

Study population

Researchers retrospectively reviewed medical records and CT scans of 100 non-smoking adults (74 women, 26 men) referred to a specialist cough clinic between 2015 and 2023, aged 18 to 80, with cough lasting more than eight weeks who had undergone chest CT. The median age was 60 years (IQR 46-67.25) and median chronic cough duration was 48 months (IQR 24-120). Cough variant asthma was present in 53 patients (53%), upper airway cough syndrome in 70 (70%) and gastro-oesophageal reflux disease in 69 (69%); 49 patients (49%) reported a productive cough.

CT scans were independently assessed by a radiologist and a pulmonologist using a modified Dunican/Okajima scoring system based on 18 bronchopulmonary segments, with a mucus plug defined as complete bronchial lumen occlusion.

Plugs linked to age and cough character

Mucus plugs were identified in 24 of 100 patients (24%). Patients with plugs were significantly older than those without (median 63.5 vs 57.5 years, p=0.012) and were significantly more likely to have a productive rather than dry cough pattern (p=0.017). Female gender and coexisting obstructive sleep apnoea (OSA) appeared to contribute to higher mucus plug scores, and OSA and gender differences reached statistical significance across plug-score subgroups (score 0 vs 1-3 vs >3).

At baseline, the median cough-specific quality of life score (LCQ) was 12.02 (IQR 9.16-14.8) and median visual analogue scale (VAS) score for cough severity was -56 mm (IQR 33-75). Treatment response, defined as a VAS reduction of more than 20 mm or an LCQ improvement of more than 1.3 points, was achieved in 32 patients (32%) by VAS and 38 patients (38%) by LCQ; baseline LCQ, VAS and treatment response did not differ significantly between patients with and without plugs.

What it means

The authors conclude that mucus plugs are frequent findings in patients with chronic cough, occurring in 24% of those undergoing chest CT, and that their presence appears related to older patient age and a productive cough pattern, with female gender and coexisting OSA contributing to higher plug burden — supporting the case for identifying new, CT-detectable treatable traits in chronic cough.

Reference: Truba O, Żuchowska J, Białek-Gosk K, Grabczak EM, Klimowicz K, Dąbrowska M. Are the mucus plugs clinically relevant in adults with chronic cough? Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain. Citing: Dunican EM, Elicker BM, Gierada DS, et al. Mucus plugs in patients with asthma linked to eosinophilia and airflow obstruction. 2018;128(3):997-1009; Okajima Y, Como CE, Nardelli P, et al. Luminal Plugging on Chest CT Scan Association With Lung Function, Quality of Life, and COPD Clinical Phenotypes. Chest 158(1):121-130.

Association of Rhinitis Phenotype With Adenoid Hypertrophy and Obstructive Sleep Apnea in Children

Allergic rhinitis does not appear to raise the risk of adenoid hypertrophy or obstructive sleep apnea (OSA) in children, according to a large Korean retrospective study — challenging the assumption that allergic inflammation of the nose indirectly worsens sleep-disordered breathing by enlarging the adenoids.

Study design

The retrospective cross-sectional study included 266 children aged 2 to 18 years who underwent polysomnography (PSG), excluding those with genetic, metabolic or neuromuscular disorders, craniofacial syndromes, or chronic lung disease. Patients were classified as allergic rhinitis (AR, n=121; typical symptoms plus allergic sensitization), non-allergic rhinitis (NAR, n=80; typical symptoms without sensitization), or control (n=65; no rhinitis). Adenoid hypertrophy (AH) was defined as an adenoid-nasopharyngeal ratio greater than 0.8, and OSA was diagnosed at an apnea-hypopnea index (AHI) of 1 event/hour or more.

Adenoid hypertrophy most common in non-allergic rhinitis

Adenoid hypertrophy prevalence was, in fact, highest in the NAR group (87.5%), compared with 61.5% in the AR group and 66.0% in controls — the opposite pattern one might expect if allergic inflammation were the main driver. The authors conclude AR was not associated with an increased rate of AH.

Obesity, not rhinitis, drives OSA risk

Neither AR, NAR, nor general rhinitis status was associated with OSA severity. Obesity emerged as the only independent risk factor associated with OSA, with an adjusted odds ratio of 3.81 ($p<0.001$); in an adjusted multivariable model, obesity carried an odds ratio of 3.81 (95% CI 1.789-8.522, $p<0.001$), while AR, NAR, AH and asthma showed no significant independent association with OSA.

What it means

The authors conclude that allergic rhinitis does not appear to be associated with adenoid hypertrophy and was not identified as a risk factor for OSA or its severity in children. Obesity was the only significant risk factor for OSA, and rhinitis status — whether allergic or non-allergic — did not directly exacerbate OSA severity or increase adenoid hypertrophy risk in this pediatric population.

Reference: Kang EK, Jeong H-I, Kim K, Ahn YM. Association of rhinitis phenotype with adenoid hypertrophy and obstructive sleep apnea in children. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

A Preliminary Study on the Benefits of Allergen Desensitization for Grasses and Dust Mites in Asthma Control During Allergy Season

Sublingual immunotherapy (SLIT) for grass pollen appears to meaningfully reduce asthma exacerbations and reliever medication use in patients with allergic asthma, according to a preliminary Italian-German study, although evidence for dust mite SLIT remains limited by small sample size.

Rationale and method

Allergic asthma is the most common asthma subtype and is frequently linked to allergic rhinitis through a shared, IgE-mediated Th2-dominant immune response that drives airway inflammation and remodeling. The study evaluated demographic, clinical, lung-function (FEV1, FVC, FEV1/FVC) and immunological data — including specific IgE to Phl p1, Phl p5, Der p1, Der p2 and Der p23 — together with Asthma Control Test (ACT) scores, reliever use and exacerbations, in patients undergoing SLIT for grass pollen and dust mite allergens.

Fewer exacerbations, less reliever use

After at least twelve months of treatment, the researchers observed statistically significant reductions in exacerbation rate ($p<0.01$) and reliever medication use ($p=0.0002$) across the overall population. These improvements were particularly evident in the subgroup receiving grass pollen SLIT ($p=0.03$ for exacerbations and $p=0.01$ for reliever use). An increase in ACT score was observed but did not reach statistical significance ($p=0.07$), likely reflecting an already high baseline level of asthma control. All patients reported improved rhinitis symptoms, while lung function parameters showed no significant changes.

Well tolerated, dust mite results exploratory

SLIT was well tolerated in the cohort, with no serious adverse events or treatment discontinuations. The subgroup of patients treated with dust mite SLIT was small, limiting the statistical power and generalisability of those findings, and the authors caution that dust mite results should be interpreted as exploratory.

What it means

The more robust and statistically supported findings relate to the grass pollen SLIT group, reflecting a more consolidated evidence base for this allergen. The authors conclude that grass pollen SLIT appears safe and potentially effective, warranting larger studies to confirm efficacy across allergens.

Reference: Mari M, Cifaldi R, Torregiani C, Monteleone G, Confalonieri P, Salton F, De Nes A, Bozzi C, Haruni X, Confalonieri M, Ruaro B. A Preliminary Study on the Benefits of Allergen Desensitization for Grasses and Dust Mites in Asthma Control During Allergy Season. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

Exploring Perceptions and Usage Patterns of Non-Medicated Nasal Sprays for Congestion Relief: Highlighting the Need for Enhanced Consumer Education

Nasal congestion imposes a substantial and often chronic symptom burden, yet consumer management remains largely reactive and short-term, according to a Norway-based consumer survey presented at the Congress by Haleon researcher Sarah Costello.

Survey design

Nasal congestion is a common upper respiratory symptom, most often arising from allergic rhinitis, which affects an estimated 10-40% of the global population and can impair daily functioning and quality of life. Despite growing use of non-medicated saline nasal sprays for cleansing, hydration and mucus removal, perceptions and usage patterns of these products have remained unclear. The study aimed to evaluate real-world insights into perceptions and usage patterns of non-medicated nasal sprays for managing nasal congestion.

A quantitative online survey of 400 adults aged 18-75 who had experienced nasal congestion in the past 12 months was conducted in Norway between 4 and 9 December 2025, via an 18-minute, 37-question questionnaire fielded by an independent market research company. The sample was 49% male and 51% female, split roughly evenly between the 18-40 and 41-75 age brackets. Brand segmentation identified 317 medicated users (84.6% of the sample) and 58 non-medicated users (15.4%).

A heavy, wide-ranging symptom burden

Nasal congestion affected 85% of respondents in the past year, the single most commonly reported condition. Fatigue was reported by 76%, sore throat by 69%, sneezing by 67%, cold and flu by 66%, and inability to sleep by 63%, illustrating how congestion co-occurs with sleep disturbance and fatigue and extends well beyond the nose to affect broader daily functioning.

Perception versus sustained use

On perceptions, 60% of the total population believed nasal sprays (medicated and non-medicated combined) provided rapid relief, though only 14% attributed this specifically to non-medicated sprays alone; 59% believed sprays were effective for targeted relief (8% non-medicated alone), and 37% believed they were effective for prolonged symptom relief (11% non-medicated alone).

Despite this, usage patterns skewed toward short, symptom-driven bursts: 81% of non-medicated spray users reported short-term use of under eight days, while only 9% reported extended use beyond eight days. Frequency data showed high-intensity use during symptomatic episodes, with 43% using sprays two to three times a day and 57% of users reporting use of non-medicated sprays two or more times daily — active use during flare-ups rather than preventive or routine use.

What it means

The authors conclude that upper airway symptoms frequently co-occur with sleep disturbance and fatigue, that symptom management remains reactive and focused on flare-ups rather than ongoing control despite symptoms persisting for weeks or months, and that positive perceptions of non-medicated nasal sprays do not consistently translate into sustained, long-term use. They highlight a gap between persistent symptoms and short treatment duration as an opportunity for greater consumer education, and call for future research into whether such education could optimise use and improve long-term congestion outcomes.

Reference: Costello S. Exploring Perceptions and Usage Patterns of Non-Medicated Nasal Sprays for Congestion Relief: Highlighting the Need for Enhanced Consumer Education. Poster No. 5044, presented at: European Respiratory Society (ERS) Congress 2026; Barcelona, Spain, 5-9 September 2026.

Clinical Implications of Rhinitis in Asthma-Obstructive Sleep Apnea Overlap Syndrome

In patients with combined asthma and obstructive sleep apnea (OSA), the presence of concurrent rhinitis is associated with poorer asthma control, more sleep-related symptoms and more severe OSA, a Tunisian study has found — underscoring the case for systematic rhinitis screening in this overlap population.

Study population

The descriptive cross-sectional study, conducted at the Pneumology Department of the Internal Security Forces Hospital between February and June 2022, included 60 patients with confirmed asthma and obstructive sleep apnea-hypopnea syndrome (OSAHS). The cohort had a mean age of 57±11 years, mean BMI of 36.8 kg/m2, and was 75% female. Patients were classified by presence of rhinitis: Group 1 (rhinitis-positive), 42 patients (70%); Group 2 (rhinitis-negative), 18 patients (30%).

Rhinitis-positive patients had significantly higher BMI (40.5±9.15 vs 35.3±5.99 kg/m2, p=0.01) and greater abdominal circumference (123.68±15.82 vs 113.36±10.55 cm, p=0.007) than rhinitis-negative patients; neck circumference did not differ significantly (42.8±4.7 vs 41.7±4.4 cm, p=0.4).

Worse asthma control and more exacerbations

Asthma exacerbations were significantly more frequent in rhinitis-positive patients (35.7% vs 16.7%, p=0.03), while wheezing (94.4% vs 85.7%, p=0.3) and nocturnal dyspnea (21.4% vs 11.1%, p=0.2) did not differ significantly between groups. Asthma control also differed markedly: only 21.6% of rhinitis-positive patients had controlled asthma compared with 56.5% of rhinitis-negative patients, while 78.4% of rhinitis-positive patients had uncontrolled asthma versus 43.5% of rhinitis-negative patients (p=0.042).

More severe sleep apnea

Sleep-related symptoms were significantly more common with rhinitis, including morning fatigue (77.78% vs 22.22%, p=0.028), nocturnal apneas (61.9% vs 38.1%, p=0.033), night sweats (54.55% vs 45.45%, p=0.046) and hypersalivation (100% vs 0%, p=0.028); daytime sleepiness did not differ significantly (69.23% vs 30.77%, p=0.5). OSA severity was also worse in rhinitis-positive patients, with severe OSA seen in 82.4% versus 17.6% of rhinitis-negative patients (p=0.017) and a markedly higher mean apnea-hypopnea index (AHI 36.5±17.28 vs 17.61±10.26 events/hour, p<0.001).

What it means

The authors conclude that in patients with asthma-OSA overlap syndrome, rhinitis is associated with poorer asthma control, increased sleep-related symptoms, and more severe OSA. These findings, they note, emphasise the importance of systematic rhinitis assessment and optimal management to improve clinical outcomes in this population.

Reference: Yangui F, Fenina W, Debbiche S, Mokaddem S, Cherif H, Charfi MR. Clinical implications of rhinitis in asthma-obstructive sleep apnea overlap syndrome. Presentation No. 332, European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

Inhaled, Nasal and Topical Corticosteroid Burden, Duration of Exposure and Risk of Corticosteroid Exposure-Associated Adverse Events: A Nationwide Cohort Study

Even patients who never take systemic corticosteroids are not free of corticosteroid-related risk, a huge Danish nationwide cohort study has found. Among more than 850,000 adults, cumulative exposure to inhaled, nasal and topical corticosteroids alone — with no systemic steroid use at all — was associated with modestly increased risks of osteoporosis, type 2 diabetes, obesity, cardiovascular disease, heart failure, GERD, cataract and pneumonia, rising with both dose and duration of exposure.

A 23-year nationwide cohort

While the risks of systemic corticosteroid exposure over longer periods of time have been solidly established in evidence, gaps have remained regarding the risk of corticosteroid exposure-associated adverse events in patients treated with multiple formulations of local corticosteroids who never experience any systemic corticosteroid exposure. Because patients with type 2 inflammation-associated diseases are often treated with multiple corticosteroid formulations simultaneously, they may be at risk of excess cumulative exposure.

Using Danish nationwide databases, the investigators identified systemic corticosteroid-naive adults who redeemed inhaled, nasal and/or topical corticosteroids between 2000 and 2012 at least twice, and matched them with non-initiators; both groups were followed for up to 23 years for the development of 11 incident corticosteroid exposure-associated conditions. Overall (inhaled, nasal and topical combined) exposure was calculated for six-month periods and categorised as low (under 1.25 daily prednisolone-equivalent mg), moderate (1.25-2.5 mg) or high (over 2.5 mg). Competing-risk Cox models with time-varying effects were used, with results expressed as hazard ratios per additional six-month period of exposure.

A large, well-matched population

The final cohort comprised 282,983 local corticosteroid initiators matched with 573,323 non-initiators. The groups were closely matched on age (45 vs 44 years), sex (47.8% vs 47.5% female), marital status (66.0% vs 66.1% married/cohabiting) and capital-region residency (25.2% vs 25.0%). However, corticosteroid initiators were significantly more likely to have only primary or secondary education (38.0% vs 34.9%, $p<0.0001$) and to have a Charlson Comorbidity Index score of 1 or above (4.5% vs 2.0%, $p<0.0001$) at baseline.

Dose-dependent risk across multiple organ systems

Cumulative dose-response associations, expressed as hazard ratios per additional six-month exposure period, showed a clear dose gradient for several outcomes. Osteoporosis risk rose from a hazard ratio of 1.01 (95% CI 1.00-1.01) at low dose to 1.10 (95% CI 1.08-1.13) at moderate dose and 1.10 (95% CI 1.07-1.13) at high dose. Type 2 diabetes mellitus showed a hazard ratio of 1.02 (95% CI 1.01-1.03) at low dose, while obesity risk increased from 1.03 (95% CI 1.02-1.04) at low dose to 1.05 (95% CI 1.02-1.07) at moderate dose.

Cardiovascular disease risk rose with dose, from 1.02 (95% CI 1.01-1.03) at low dose to 1.03 (95% CI 1.01-1.04) at high dose, and heart failure risk peaked at moderate dose (hazard ratio 1.06, 95% CI 1.03-1.09). Gastro-oesophageal reflux disease (GERD) risk was elevated at low dose (hazard ratio 1.03, 95% CI 1.02-1.03) and rose further at high dose (1.04, 95% CI 1.03-1.05). Cataract risk increased at high dose (hazard ratio 1.04, 95% CI 1.02-1.06). Fractures, depression/anxiety and psychiatric disease showed hazard ratios close to 1.00 across dose categories, indicating little to no measurable excess risk for these outcomes.

Pneumonia showed the steepest dose-response

The most pronounced dose-response relationship was seen for pneumonia, where the hazard ratio rose from 1.03 (95% CI 1.02-1.04) at low dose to 1.11 (95% CI 1.10-1.13) at moderate dose and 1.15 (95% CI 1.13-1.18) at high dose — a pattern mirrored in the cumulative incidence curves, which showed local corticosteroid users consistently accruing higher cumulative incidence of most outcomes than matched never-users over the 16-plus years of follow-up. Findings stratified by formulation (total, inhaled, nasal and topical) were broadly consistent with the overall pattern, with topical and total exposure showing some of the more pronounced high-dose associations across outcomes.

What it means

The authors conclude that in individuals using local corticosteroids, the overall corticosteroid burden — including shorter periods of high-dose exposure — is associated with corticosteroid exposure-associated adverse events, albeit generally with low incidence and modest hazard ratios. The findings suggest that cumulative local corticosteroid exposure, not just systemic steroid use, deserves consideration when assessing long-term treatment-related risk in patients with type 2 inflammation-associated conditions.

Reference: Håkansson KEJ, Skov IR, Andersen SAW, Ali Z, Thomsen SF, Løkke A, Ibsen R, Hilberg O, Meteran H, Johnsen CR, Backer V, Ulrik CS. Inhaled, nasal and topical corticosteroid burden, duration of exposure and risk of corticosteroid exposure-associated adverse events - a nationwide cohort study. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain.

Effect of Adenosine Triphosphate (ATP) on Laryngeal and Cough Hypersensitivity in Refractory Chronic Cough

Inhaled adenosine triphosphate (ATP) triggers dose-dependent narrowing of the larynx in patients with refractory chronic cough (RCC) but not in healthy volunteers, a double-blind, randomised, cross-over study has shown — offering mechanistic support for P2X3 receptor antagonism as a treatment strategy, even though ATP did not heighten patients' sensitivity to capsaicin-induced coughing.

Rationale

Refractory chronic cough is characterised by both laryngeal and cough hypersensitivity. P2X3 receptor antagonists have recently been shown to reduce cough frequency in RCC, but the mechanism by which activation of the P2X3 receptor induces cough has been unclear. The study aimed to determine whether inhaled ATP induces capsaicin cough hypersensitivity or laryngeal hypersensitivity, measured via the anterior commissure (AC) angle on laryngoscopy, in RCC patients compared with healthy controls.

Study design

Twelve RCC patients and six healthy controls underwent ATP and saline challenge on separate days in a double-blind, randomised cross-over design. ATP challenge solutions of 3, 10, 100 and 300 mM were inhaled consecutively as single breaths via a breath-actuated nebuliser; saline was administered four times as a control on the other visit. Capsaicin cough challenges were performed following ATP or saline to assess cough hypersensitivity. Laryngoscopy recordings were obtained before and after each dose, with anterior commissure angle measured using ImageJ software by two blinded scorers (ICC=0.73), and a linear mixed-effects model examined group, challenge agent, dose and interaction effects.

RCC patients (n=12) were significantly older than healthy controls (57.6±9.4 vs 48.0±6.2 years, p=0.0146) and had markedly worse cough-related quality of life, with total LCQ scores of 9.1±3.0 vs 20.9±0.2 (p=0.0001) and laryngeal hypersensitivity questionnaire (LHQ) scores of 59.3±19.3 vs 108.8±17.2 (p=0.0001). Median cough duration in the RCC group was 12.3 years.

ATP narrows the larynx in RCC but not controls

ATP induced concentration-dependent laryngeal narrowing in RCC patients — reflected by a progressive reduction in AC angle across challenge doses — that was not seen in healthy controls or with saline. Comparisons of AC angle between RCC and healthy control groups reached statistical significance at several challenge doses ($p<0.05$, and $p<0.01$ at others, Bonferroni-adjusted versus baseline). RCC patients also demonstrated narrower baseline AC angles compared with healthy controls.

No added capsaicin cough hypersensitivity

ATP challenge induced more coughs than saline challenge in RCC patients across increasing doses, whereas healthy controls showed a minimal cough response to ATP. However, capsaicin cough challenge responses (C2 and C5 concentrations) were not different when comparing post-ATP with post-saline responses in either group, except for an increase in the C5 response after ATP in RCC patients.

What it means

The authors conclude that ATP induces concentration-dependent narrowing of the anterior commissure angle in RCC patients but not healthy controls, with no overall effect on capsaicin cough hypersensitivity. This provides evidence of ATP-induced laryngeal hypersensitivity and a mechanistic rationale for P2X3 receptor antagonism as a treatment approach in refractory chronic cough.

Reference: Williams ZJ, Hull JH, Abubakar-Waziri H, Gaffney E, Meah S, Bolla R, Mazzone S, McGarvey L, Bhavsar P, Koh M, Chung KF. Effect of adenosine triphosphate (ATP) on laryngeal and cough hypersensitivity in refractory chronic cough. Poster presented at: European Respiratory Society (ERS) International Congress 2026; Barcelona, Spain. Funded by Merck Sharp & Dohme.

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