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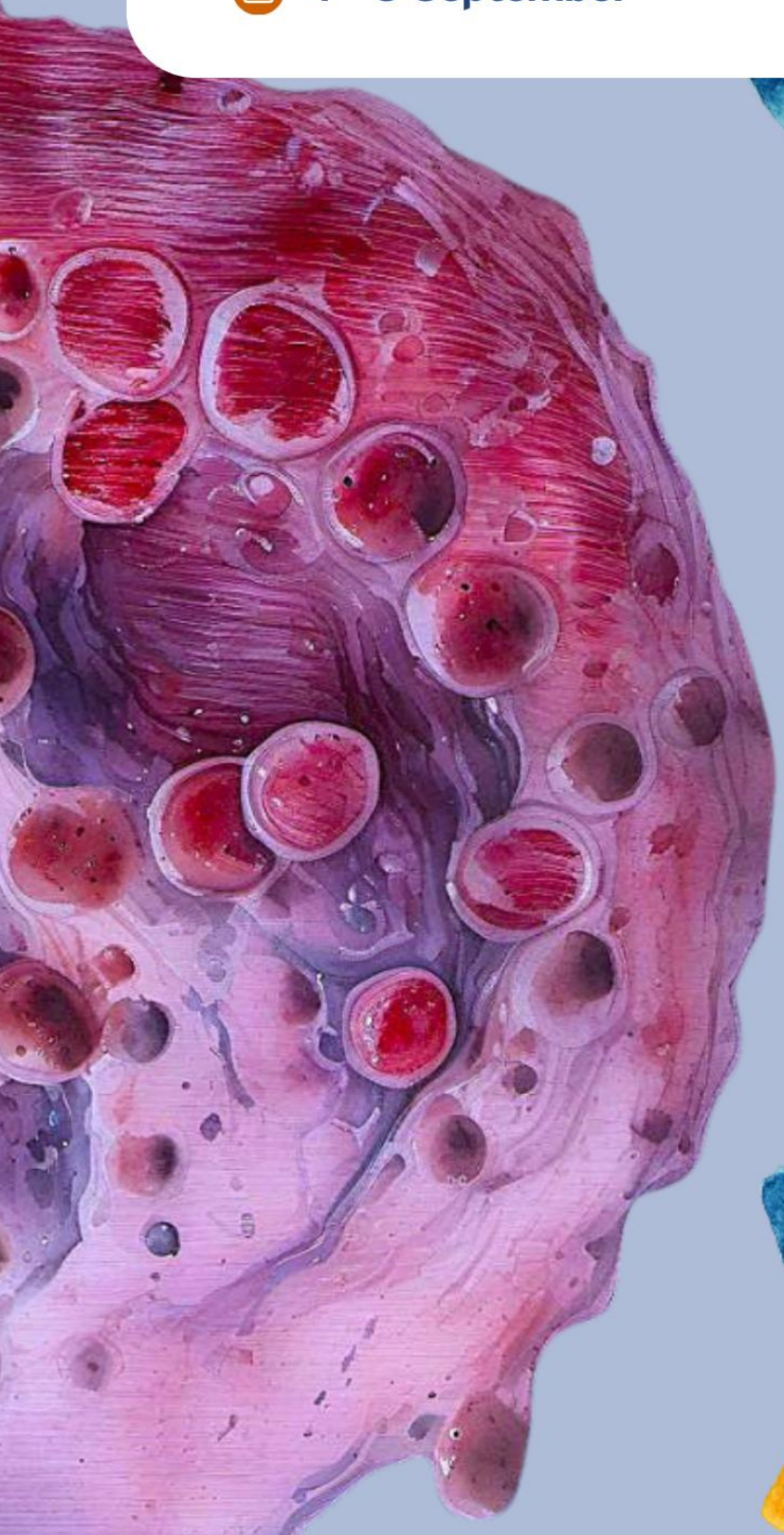

ABSTRACT BOOK

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ORAL PRESENTATION SESSION 1

Submission number: 000039
Prefix: OAS 1

DYSREGULATED AIRWAY MUCINS: TRIGGERS OF LOCAL AND SYSTEMIC INFLAMMATION

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BACKGROUND

Asthma is a chronic respiratory disease characterised by immune cell dysregulation and epithelial barrier dysfunction. Airway mucus, secreted by epithelial goblet cells, is composed of gel forming mucins – MUC5B and MUC5AC, which protect the lung from harmful insults. Mucins are dysregulated in asthma which contributes to airway plugging. Recent research suggests a crosstalk between immune cells and mucus, however, the importance of central mucus components, including MUC5B and MUC5AC, in airway immunity is unclear. Here, we use mice that lack MUC5B or MUC5AC to determine how individual mucins shape local and systemic immune responses that are elicited in asthma.

METHOD

Immune cells in bronchoalveolar lavage fluid (BALF), lung tissue and blood from wild type and naïve mucin knockout mice were profiled by flow cytometry and differential cell count.

RESULTS

Mice lacking MUC5B had significant infiltration of neutrophils in BALF, lung and blood, whereas MUC5AC deficient mice exhibited elevated eosinophil and neutrophil levels in blood but had normal BALF and lung cellularity. Airway inflammatory cell numbers correlated significantly with increasing level of epithelial shedding in BALF of MUC5B deficient mice, indicating impaired epithelial barrier integrity.

CONCLUSION

MUC5B, but not MUC5AC, is essential to keep the airways clean and prevent inflammation. Our results suggest that dysregulated mucin responses directly influence blood eosinophils and airway neutrophilia, characteristic features in subgroups of asthma. Restoring epithelial mucus dysfunction has potential to not only improve airway plugging but limit persistent inflammation in asthma.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000019
Prefix: OAS 2

NLRP3 INHIBITION WITH MCC950: A PROMISING APPROACH TO REDUCE MUCUS PRODUCTION AND IMPROVE EPITHELIAL FUNCTION IN AIRWAY INFLAMMATION

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BACKGROUND

Asthma is a chronic inflammatory airway disease characterized by excessive mucus secretion and epithelial barrier dysfunction. The NLRP3 inflammasome has been implicated in asthma pathogenesis by promoting inflammation and mucus hypersecretion. Targeting NLRP3 activity may offer a therapeutic strategy to mitigate these pathological processes. This study investigates the effects of the NLRP3 inhibitor MCC950 on inflammation- and mucus-related gene expression in TNF-α–stimulated human bronchial epithelial cells.

METHOD

BEAS-2B bronchial epithelial cells were stimulated with TNF-α (20 ng/mL) to induce inflammation. Apoptosis induction was verified via Annexin V staining and flow cytometry. Cells were then treated with MCC950 (20 μM/mL). Expression levels of MUC5AC, ICAM-1, NLRP3, and CASP-1 were assessed using quantitative RT-PCR. Additionally, IL-1β secretion was quantified to evaluate inflammasome activity.

RESULTS

TNF-α significantly upregulated MUC5AC ($p < 0.01$), NLRP3 ($p < 0.01$), CASP-1 ($p < 0.001$), and ICAM-1 ($p < 0.05$). MCC950 treatment reversed TNF-α-induced MUC5AC ($p < 0.01$), NLRP3 ($p < 0.01$), and CASP-1 expression ($p < 0.01$),and partially reduced ICAM-1 expression ($p = 0.08$). IL-1β secretion increased following TNF-α stimulation (115.1 pg/mL) and was significantly reduced by MCC950 (73 pg/mL; $p < 0.05$), confirming suppression of NLRP3 inflammasome activity.

CONCLUSION

MCC950 suppressed TNF-α-induced inflammatory responses and mucus-associated gene expression by targeting the NLRP3 inflammasome. These findings support its therapeutic potential for asthma. Future studies employing gene knockdown approaches are needed to clarify the specific role of NLRP3 and assess long-term efficacy in airway inflammation.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000024
Prefix: OAS 3

ALLERGOONCOLOGY: NON-ALLERGIC URTICARIAL SKIN REACTIONS ASSOCIATED WITH MOV18 IGE, A FIRST-IN-CLASS IGE ANTIBODY RECOGNIZING FOLATE RECEPTOR ALPHA (FRα)

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BACKGROUND

MOv18 IgE is a first-in-class IgE antibody targeting Folate Receptor alpha (FRα), a tumour-associated antigen frequently overexpressed in ovarian and other cancers. IgE-based immunotherapies provide key advantages, including high-affinity engagement with immune effector cells via the FcεRI receptor and to stimulate tumour infiltrating immune cells against cancer. A recent Phase I clinical trial demonstrated encouraging anti-tumour responses with MOv18 IgE but also noted transient urticarial skin reactions. We aimed to investigate the immunological mechanisms underlying these reactions and to determine whether they were mediated by allergic mechanisms.

METHOD

Twenty-four patients with FRα-positive tumours received escalating doses of MOv18 IgE. Clinical information on urticarial skin reactions was collected. FRα expression in human skin was assessed using immunohistochemistry (IHC). Urticarial and unaffected skin biopsies from a patient who received the highest antibody dose were analysed using immuno-mass spectrometry (IMS) and transcriptomic analyses to evaluate immune cell infiltration and mast cell degranulation in the skin. Circulating immunological markers, such as β-tryptase and basophil activation, were also measured to assess the potential for systemic allergic responses.

RESULTS

Urticarial skin reactions occurred in 62.5% of patients, typically mild and diminishing with continued repeated doses and treatment. These reactions were not associated with serum β-tryptase elevation, suggesting that systemic allergic responses were absent. IHC and IMS analyses confirmed that FRα was not expressed in normal skin, and there was no evidence of MOv18 IgE binding to skin antigens. Lesional skin biopsies from a patient who developed urticarial reactions revealed scattered eosinophils and neutrophils, and signs of mast cell degranulation, without substantial immune cell infiltration. Transcriptomic profiling indicated activation of pro-inflammatory, but not of those linked to allergy. Circulating levels of allergic cytokines and basophil activation remained unchanged.

CONCLUSION

The urticarial skin reactions observed in MOv18 IgE-treated patients were not mediated by allergic mechanisms or by the antibody binding to skin antigen. These findings instead point towards an infusion-related response, a phenomenon commonly seen with monoclonal antibody therapies. This data affirms the manageable nature of these reactions and reinforce the overall safety profile of MOv18 IgE. These data are crucial for advancing IgE antibodies in cancer immunotherapy while ensuring patient safety.

CONFLICTS OF INTEREST

J.S. and S.N.K. are founders and shareholders of Epsilogen Ltd. H.J.B. is employed through a fund provided by Epsilogen Ltd. J.C. has been employed through a fund provided by Epsilogen Ltd. S.N.K., J.S., D.H.J. and H.J.B. declare patents on antibodies for cancer

ORAL PRESENTATION SESSION 2

Submission number: 000043
Prefix: OAS 4

FREQUENCY OF EOSINOPHIL SUBGROUPS VARIES BY INFLAMMATORY CONTEXT IN EXPERIMENTAL MOUSE MODELS OF ASTHMA

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BACKGROUND

Eosinophils are multifunctional leukocytes involved in homeostasis, host defense and immunopathology, particularly in allergic diseases. Studies of acute experimental asthma in mice have revealed the existence of distinct eosinophil subpopulations: resident (rEos) and inflammatory eosinophils (iEos). Our aim was to determine the frequencies of iEos and rEos in a virus-induced asthma exacerbation model, and in an IL-33-induced eosinophilic inflammation model.

METHOD

Wild type (WT) mice were exposed to house dust mite (HDM) or saline intranasally for three weeks followed by intranasal dsRNA (Poly(I:C)) for three consecutive days to mimic rhinovirus infection. In additional experiments, WT mice were exposed to recombinant IL-33 or saline every other day for a total of five days. Twenty-four hours after the last exposure, mice were sacrificed and bronchoalveolar lavage (BAL) fluid, lung tissue, and bone marrow (BM) were sampled and assessed by differential cell count or flow cytometric analysis of iEos (Siglec-$F^{+}CD11b^{+}CD101^{hi}CD62L^{lo}$) and rEos (Siglec-$F^{+}CD11b^{+}CD101^{lo}CD62L^{hi}$).

RESULTS

Eosinophilic inflammation was confirmed by differential cell count of BAL from HDM-treated, HDM/dsRNA-treated and IL-33 treated mice compared to saline-controls. iEos were significantly increased in the lungs of HDM-treated mice compared to saline- or HDM/dsRNA-treated mice, while rEos were significantly increased in HDM/dsRNA-treated mice. Furthermore, exposure to IL-33 led to increased frequency of lung iEos compared to saline-controls. No differences were found in BM.

CONCLUSION

Our data suggests that different inflammatory signals drive eosinophil heterogeneity which may affect responses to eosinophil-targeted treatments. Ongoing studies will uncover the immunomodulatory role of each population.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000070
Prefix: OAS 5

PROGNOSTIC ROLE OF CD62LLOW INFLAMMATORY EOSINOPHILS IN ASTHMA SEVERITY AND THEIR IMPORTANCE IN MEPOLIZUMAB RESPONSE PREDICTION

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BACKGROUND

Asthma is a chronic respiratory disease characterized by airway inflammation and bronchoconstriction, causing wheezing, coughing, chest tightness, and breathing difficulties. It includes eosinophilic (>300 eosinophils/μL) and non-eosinophilic endotypes. This study aims to characterize asthma endotypes by analyzing eosinophil sub-populations and investigating the prognostic and predictive role of inflammatory eosinophils sub-phenotypes.

METHOD

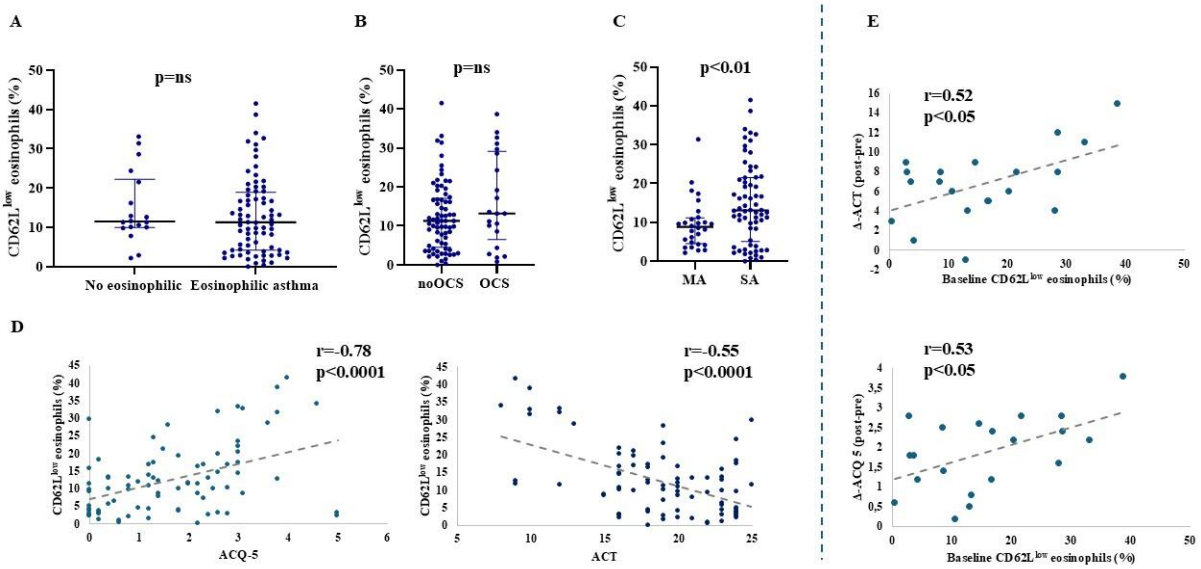
Ninety-five patients with bronchial asthma were enrolled in the study. Data were collected regarding asthma control, using the Asthma Control Test (ACT) and the Asthma Control Questionnaire 5 (ACQ-5), as well as peripheral blood eosinophil counts, both in absolute numbers and percentages. For flow cytometric analysis, peripheral blood eosinophils were isolated, labeled with fluorescent antibodies, and eosinophil subpopulations were characterized as resident eosinophils ($CD62L^{bright}$) and inflammatory eosinophils ($CD62L^{low}$).

RESULTS

Statistical analysis of asthma endotypes revealed significant differences in absolute and percentage eosinophil counts between eosinophilic and non-eosinophilic asthma ($p<0.0001$), but not in $CD62L^{low}$ eosinophils. Concerning OCS, we didn't observe statistically significant differences between patients with OCS dependence and patients without it. Patients with severe asthma had a higher percentage of inflammatory $CD62L^{low}$ eosinophils than those with moderate asthma ($p<0.01$) and exhibited worse asthma control (ACT: $p<0.0001$, ACQ-5: $p<0.0001$). However, total eosinophil counts did not differ between asthma severities. A negative correlation was observed between ACT scores and $CD62L^{low}$ eosinophils ($r=-0.55$, $p<0.0001$), while a positive correlation was found with ACQ5 scores ($r=0.49$, $p<0.0001$). Twenty out of 95 asthma patients were treated with mepolizumab and inflammatory eosinophils were reduced after treatment ($p<0.001$). Concerning predictive value, 20 patients treated with mepolizumab were analyzed and a positive correlation between their baseline inflammatory eosinophils and the improvement of ACT and ACQ-5 (showed as Δ-ACT and Δ-ACQ-5) was found ($r=0.52$, $p<0.05$ and $r=0.53$, $p<0.05$ respectively).

CONCLUSION

These findings suggest that CD62L^{low} eosinophils are associated with severe asthma and may serve as a prognostic and predictive biomarker of disease severity and mepolizumab treatment response, independent of absolute eosinophil count. In addition, OCS didn't affect inflammatory eosinophils, enhancing their prognostic role in both OCS dependent and independent patients.



(A): no statistically significant difference between eosinophilic and no eosinophilic asthma; **(B):** no statistically significant difference between OCS dependent and OCS independent asthma; **(C):** SEA patients had ah higher percentage of inflammatory eosinophils than moderate asthmatic patients; **(D):** Inflammatory eosinophils percentage correlated with ACT and ACQ-5; **(E):** Baseline inflammatory eosinophils correlated with the improvement of ACT and ACQ-5 in mepolizumab treated asthma patients.

(A): no statistically significant difference between eosinophilic and no eosinophilic asthma; (B): no statistically significant difference between OCS dependent and OCS independent asthma; (C): SEA patients had ah higher percentage of inflammatory eosinophils than moderate asthmatic patients; (D): Inflammatory eosinophils percentage correlated with ACT and ACQ-5; (E): Baseline inflammatory eosinophils correlated with the improvement of ACT and ACQ-5 in mepolizumab treated asthma patients.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000083
Prefix: OAS 6

BBT002: A NOVEL TETRAVALENT BISPECIFIC ANTIBODY TARGETING IL4RA AND IL5 DEMONSTRATES POTENTIAL TO IMPROVE ASTHMA TREATMENT OUTCOMES

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*Presenting author: S. Xu

BACKGROUND

Type II (T2) inflammatory cytokines, IL-4, IL-13, and IL-5, play crucial roles in asthma pathogenesis and are linked to increased disease severity, reduced lung function, and increased risk of exacerbation. While current biologics targeting individual cytokines/pathways have shown clinical benefit, growing evidence suggests that co-inhibition of multiple T2 pathways may yield enhanced therapeutic outcomes. BBT002 is a novel tetravalent bispecific antibody specifically designed to simultaneously neutralize IL-4Rα and IL-5, integrating dual-pathway blockade in a single molecule. Coupling with Fc modification to extend its half-life, BBT002 offers a next-generation approach to comprehensively suppress T2–driven pathology in asthma and other T2 inflammatory related conditions.

METHOD

In-vitro binding and TF-1 cell proliferation assays were performed to evaluate BBT002 binding potency for IL4Ra and IL5 and its dual inhibitory effect versus single target antibodies. Additionally, hIL4/hIL4Rα KI C57BL/6 mice with OVA-induced asthma was used to evaluate the BBT002 dose-response relationship and its efficacy versus single target antibodies. Finally, hFcRn KI mouse model was used to evaluate the impact of Fc modification on BBT002 half-life.

RESULTS

BBT002 exhibited subnanomolar affinity binding to both IL-4Rα and IL-5 and its ability to inhibit both targets simultaneously without losing its potency in in vitro binding assays. In the TF-1 cell proliferation assay, BBT002 effectively inhibited signaling induced by IL-4, IL-13, and IL-5, resulting in a robust suppression of cytokine-driven cell proliferation that surpassed the activity of single-target monoclonal analogues, including Dupilumab and Mepolizumab. In hIL4/hIL4Rα KI C57BL/6 mouse model of OVA-induced asthma, BBT002 demonstrated notable dose-dependent reductions in eosinophils within alveolar lavage fluid, total IgE in serum, and marked reductions in bronchial inflammatory cell infiltration and mucus production as evidenced by H&E and PAS staining. Additionally, BBT002 outperformed IL-4Rα and IL-5 monoclonal antibodies and Dupilumab analogue in this model. Pharmacokinetic experiment in hFcRn KI mice showed that BBT002 had a prolong half -life, consistent with its Fc engineering.

CONCLUSION

Nonclinical studies demonstrated that BBT002's dual inhibition of IL-4Rα and IL-5 provides a broader and more robust suppression of T2 inflammation in asthma than single target therapies. Its extended half-life supports a more convenient dosing regimen. Overall, BBT002 has a great potential to improve clinical outcomes and patient adherence.

CONFLICTS OF INTEREST

Employees of Bambusa Therapeutics and Employees of Biotheus (Part of BioNTech)

ORAL PRESENTATION SESSION 3

Submission number: 000045
Prefix: OAS 7

DISTINCT CYTOKINE SIGNATURES IN NASAL LAVAGE OF PATIENTS WITH ASPIRIN-EXACERBATED RESPIRATORY DISEASE

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BACKGROUND

Aspirin-exacerbated respiratory disease (AERD) is characterized by a clinical triad of asthma, aspirin hypersensitivity, and chronic rhinosinusitis with nasal polyps (CRSwNP), along with an imbalance between proinflammatory and anti-inflammatory eicosanoids. The disease is also marked by a predominance of type 2 cytokines, including IL-4, IL-5, and IL-13.

METHOD

To better characterize patients with AERD (n = 14) in comparison to healthy controls (HC, n = 11), we measured the levels of 17 selected inflammatory markers in induced sputum (IS), nasal lavage (NL), and serum samples.

The proteomic profile of cytokines and chemokines was assessed using a multiplex bead-based immunoassay (Luminex xMAP technology). Complete blood count (CBC) was performed, and sinus involvement was evaluated using the Lund-Mackay scoring system based on computed tomography. The analytes measured included: IL-4, IL-4RA, IL-5, IL-13, IL-8, IL-28A, IL-28B, TSLP, CCL17, CCL22, CCL26, CXCL10, CXCL11, IFN-β, IFN-γ, periostin, and surfactant protein D (SP-D).

RESULTS

Compared to healthy controls, patients with AERD showed elevated serum total IgE levels and peripheral blood eosinophilia. No significant differences in cytokine levels were observed in induced sputum between the two groups. However, in nasal lavage samples, patients with AERD demonstrated significantly higher levels of IL-4, IL-4RA, IL-5, IL-13, IL-8, IL-28B, TSLP, CCL26, CXCL10, CXCL11, IFN-β, IFN-γ, and periostin compared to controls. In serum, only one analyte- CCL17 was significantly elevated in the AERD group. Details are presented on Figure 1. A strong positive correlation was observed between periostin levels in NL and the L-M score in patients with AERD ($r = 0.72$, $p = 0.009$). In the AERD group, blood eosinophil counts were positively correlated with IL-4 levels in induced sputum (IS) ($r = 0.59$, $p = 0.03$) and with SP-D levels in serum ($r = 0.61$, $p = 0.02$).

CONCLUSION

Patients with AERD exhibit distinct upper airway cytokine profiles, particularly in nasal lavage fluid, highlighting the role of type 2 inflammation and interferon signaling pathways in the pathophysiology of the disease. These findings may support the use of localized biomarkers for disease characterization and monitoring. The strong correlation between periostin levels in nasal lavage and sinus opacification further supports the role of periostin as a potential biomarker of disease severity.

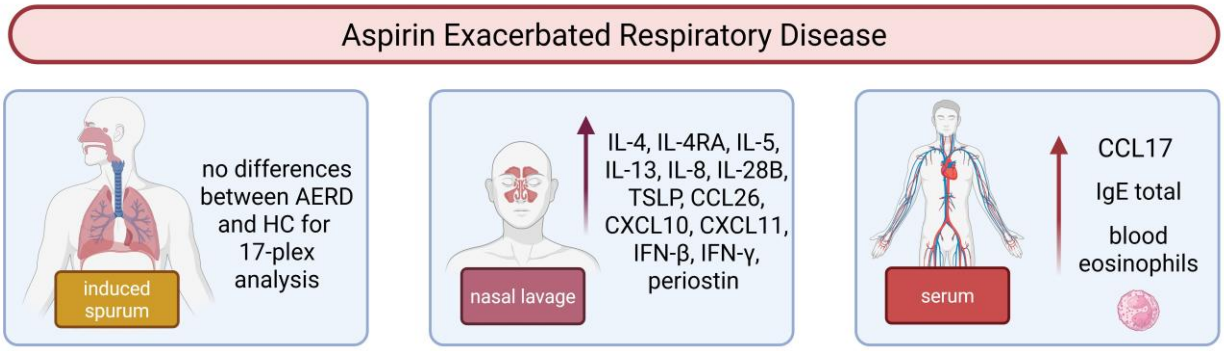

Figure 1. Inflammatory mediator differences between individuals with AERD and healthy controls.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000047
Prefix: OAS 8

DUPILUMAB IS EFFICACIOUS IN CHILDREN WITH EOSINOPHILIC ESOPHAGITIS IRRESPECTIVE OF INDIVIDUAL ATOPIC COMORBIDITIES: 16-WEEK RESULTS FROM THE PHASE 3 EOE KIDS STUDY

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BACKGROUND

Many patients with eosinophilic esophagitis (EoE) experience pre- or co-existing atopic comorbidities which may complicate their clinical care requirements and result in additional patient burden. Dupilumab is approved in the USA and EU for the treatment of EoE in patients aged ≥1 year weighing ≥15 kg. This analysis assessed the efficacy of dupilumab vs placebo in children aged 1–11 years weighing ≥15 kg with EoE, according to baseline history of individual atopic comorbidities: atopic dermatitis, asthma, allergic rhinitis, and food allergy.

METHOD

Patients aged 1–11 years weighing ≥15 kg with EoE who were randomized to weight-tiered dupilumab or placebo for 16 weeks in the phase 3 EoE KIDS trial (NCT04394351) were included. Endpoints (Week 16) included the proportions of patients achieving peak esophageal intraepithelial eosinophil counts (PEC) of ≤6 and <15 eosinophils per high-power field (eos/hpf); and mean change from baseline in Endoscopic Reference Score (EREFS) and EoE Histology Scoring System (EoEHSS) grade (severity) and stage (extent) scores. Proportions of days with ≥1 EoE signs as measured by the Pediatric Eosinophilic Esophagitis Sign/Symptom Questionnaire – Caregiver version (PESQ-C) were also assessed.

RESULTS

At baseline, 32/32 (100.0%) and 26/29 (89.7) patients in the dupilumab and placebo groups, respectively, had ≥1 atopic comorbidity. Dupilumab treatment led to greater proportions of patients achieving PEC ≤6 eos/hpf regardless of individual atopic comorbidities when analyzed separately (rate difference vs placebo [95% confidence interval]: with/without atopic dermatitis: 73.7% [53.9–93.5]/45.5% [14.2–76.8]; with/without asthma: 53.7% [29.7–77.8]/77.8% [50.6–100.0]; with/without allergic rhinitis: 60.1% [39.3–81.0]/66.7% [29.0–100.0]; with/without food allergy: 61.0% [40.9–81.1]/66.7% [29.0–100.0]; **Figure**). Dupilumab treatment also led to greater proportions achieving PEC <15 eos/hpf, improved EREFS and EoEHSS grade and stage scores vs placebo in all subgroups and generally led to a reduced proportion of days with ≥1 EoE signs (as measured by PESQ-C) vs placebo, regardless of individual atopic comorbidities when analyzed separately. Overall safety for this cohort was consistent with the known dupilumab safety profile.

CONCLUSION

Dupilumab treatment improved features of EoE vs placebo in children aged 1–11 years weighing ≥15 kg, regardless of baseline history of individual atopic comorbidities when analyzed separately.

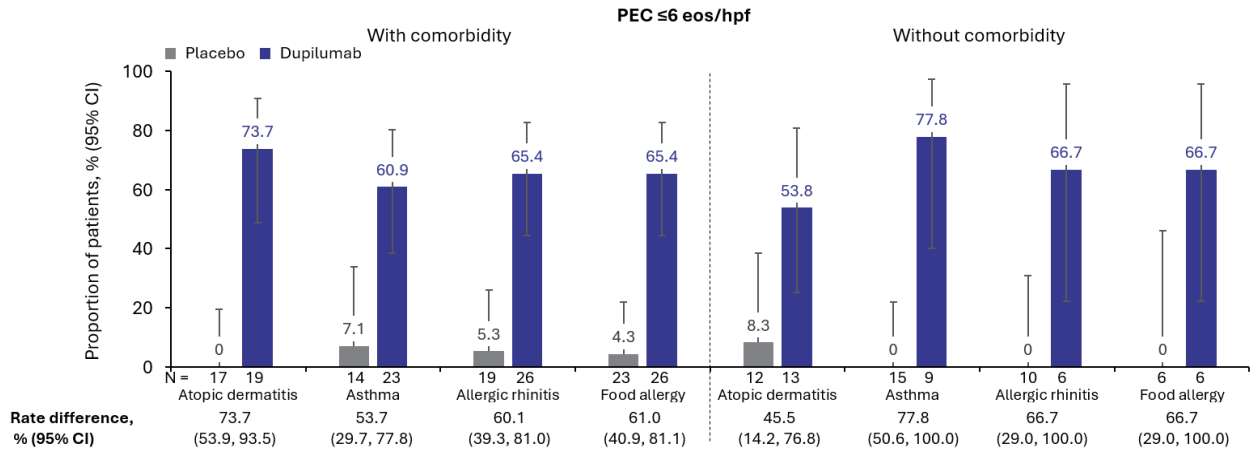

Figure. Proportion of patients achieving PEC ≤6 eos/hpf vs placebo at Week 16, by atopic comorbidity.

Patients were considered as non-responders after rescue treatment. Patients with missing PEC at Week 16 were considered as non-responders if missing was not due to COVID-19 and were imputed by multiple imputation if missing was due to COVID-19. The 95% CI for proportion of responders in each treatment was calculated using exact binomial method. Rate differences between dupilumab and placebo, and corresponding CI are based on the Mantel–Haenszel method.CI, confidence interval; COVID-19, coronavirus disease 2019; eos/hpf, eosinophils per high-power field; PEC, peak esophageal intraepithelial eosinophil count.

CONFLICTS OF INTEREST

Cianferoni A: AstraZeneca – consultant. DBV Technologies, Regeneron Pharmaceuticals Inc., Sanofi – medical advisory board. Aimmune, DBV Technologies – grant support. Chehade M: Adare Pharmaceuticals/Ellodi Pharmaceuticals, Allakos, AstraZeneca, Bristol Myers Squibb, Nexstone Immunology/Uniquity Bio, Phathom Pharmaceuticals, Recludix Pharma, Regeneron Pharmaceuticals Inc., Sanofi, Shire/Takeda – consultant. Adare Pharmaceuticals /Ellodi Pharmaceuticals, Allakos, AstraZeneca, Celgene, Danone, Regeneron Pharmaceuticals Inc., Shire/Takeda – research funding. Gold BD: Johnson & Johnson, Mead Johnson Nutrition/Reckitt, Nutricia, Regeneron Pharmaceuticals Inc./Sanofi – consultant, advisory board. Diasorin, Ironwood Pharmaceuticals, Inc. – advisory board. IQVIA/Pfizer – DSMB Advisory Board. Mead Johnson Nutrition/Reckitt – speaker fees. Pfizer – Data Safety and Monitoring Board chair. Aceves S: Aimmune, AstraZeneca, Medscape – advisory board/consultancy fees. Sanofi/Regeneron Pharmaceuticals Inc. – speaker fees, consultant. National Institute of Health – research funding. Co-inventor of budesonide oral suspension (Eohilia), patented by the University of California, San Diego and licensed by Takeda. Xia C, Raphael BP, Radwan A: Regeneron Pharmaceuticals Inc. – employees and shareholders. Zaghloul S, Angello JT: Sanofi – employees, may hold stock and/or stock options in the company.

Submission number: 000017
Prefix: OAS 9

IDENTIFICATION OF NONINVASIVE BIOMARKERS OF PEDIATRIC EOSINOPHILIC ESOPHAGITIS

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*Presenting author: M. Votto

BACKGROUND

This study aimed to identify noninvasive biomarkers for EoE diagnosis and monitoring, assessing disease activity with the new proposed set of outcome measures (COREOS) for improving the data quality of studies.

METHOD

We enrolled children and adolescents with EoE and healthy controls, followed at the Pediatric Clinic in Pavia, Italy. We collected clinical (Pediatric Eosinophilic Esophagitis Symptom Scores [PEESS® 2.0]), endoscopic (Endoscopic Reference Score [EREFS 0-9]), and histologic (peak of eosinophils [PEC]) data. We assessed blood eosinophil count (percent and absolute number), serum pro-inflammatory cytokines (interleukin [IL]-1, IL-2, IL-4, IL-5, IL-6, IL-17, tumor necrosis factor [TNF]-), tissue (transforming growth factor [TGF]-, IL-10, plasminogen activator inhibitor [PAI]-1) and vascular (vascular endothelial growth factor [VEGF], vascular cell adhesion molecule [VCAM], angiopoietin [Ang]-2) remodeling markers, eosinophil proteins (eosinophilic cationic protein [ECP] and galectin [GAL]-10), tryptase, immunoglobulins G4 (IgG4). A blood sample was obtained from all subjects at baseline and each follow-up visit from EoE patients.

RESULTS

Twenty-one healthy controls and 21 EoE patients were enrolled. IL-17 values were strongly and significantly predictive of high disease activity (clinically and endoscopically expressed) both in the univariate [(coef. 303.10, 95% CI 15.9-590.2; p=0.04), (coef. 303.34, 95% CI 66.57-594.11; p=0.01), (HR 5.91 x10^{10}, 95% CI 0.22-1.58 x10^{20}; p=0.07)] and multivariate [(coef. 347.01, 95% CI 93.45-600.58; p=0.01), (coef. 428.86, 95% CI 198.77-658.95; p=0.0001), (HR 5.91x10^{10}, 95% CI 0.22-1.58 x10^{20}; p=0.07)] analysis. To address whether a noninvasive biomarker could screen for EoE, we assessed serum biomarker differences between EoE and control patients. Mean values of GAL-10 (1.17 ± 0.44 ng/ml *vs*. 0.91 ± 0.35 ng/ml) and TGF- (56,176.61 ± 26,251.29 pg/ml *vs*. 25,997.67 ± 6,611.68 pg/ml) were significantly increased in EoE patients compared to healthy controls (p=0.02 and p=0.0001, respectively). The AUC for TGF- values was 0.92 (sensitivity 0.84 and specificity 1.0) and 0.67 (sensitivity 0.75 and specificity 0.57) for GAL-10.

CONCLUSION

We identified three promising biomarkers for EoE diagnosis and surveillance. This study is the first step towards more extensive studies to confirm the results and attempt to identify noninvasive biomarkers, which are urgently needed in pediatric EoE management.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

POSTER SESSION

TOPIC 1: ASTHMA, CRSwNPs AND EGPA - SUBGROUP 1

Submission number: 000042
Prefix: P01

THE IMPACT OF TYPE 1, TYPE 2, AND TYPE 3 INFLAMMATION ON AIRWAY EPITHELIAL CELLS

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BACKGROUND

The airway epithelium serves as the first line of defense by forming a physical barrier against inhaled environmental threats like allergens, viruses, and bacteria. Additionally, it has lately been shown that airway epithelial cells are both targets and regulators of inflammation. Asthma is a heterogeneous disease composed of several subgroups, each characterized by the involvement of distinct immune cells, different triggers of exacerbation, and differences in disease severity. These subgroups are likely separated by the involvement of different types of inflammatory mediators that can impact the airway epithelial cells. The aim of this study was therefore to determine how distinct inflammatory microenvironments, such as type 1 (T1), type 2 (T2), and type 3 (T3) inflammation, affect the airway epithelial cells.

METHOD

Primary mouse trachea epithelial cells (MTEC) were cultured at air-liquid interface. Following differentiation, the cells were stimulated with IFNγ, IL-13, or IL-17A, to mimic the asthma-relevant T1, T2, or T3 inflammation, respectively. Subsequently, apical wash, cells, and the basolateral media were collected for analysis by proteomics and ELISA to determine the cell response.

RESULTS

Our data show that the different types of stimulation uniquely altered the protein expression in the cells. IFNγ-stimulated MTECs showed an increased release of Cxcl10, and enrichment of proteins associated with a T1 response, such as Wars1 and Il18bp. Stimulation with IL-13 led to an increase in proteins associated with T2 signature genes, such as Alox15 and Clca1. IL-17A stimulation induced the upregulation of proteins associated with neutrophil activation and migration, such as Ccxl5 and Lcn2, along with the increased release of the neutrophil recruiter Cxcl1. IL-13 and IL-17A, but not IFNγ, promoted apical secretion of mucus-associated proteins.

CONCLUSION

Together, these results demonstrate that airway epithelial cells respond distinctly to T1, T2, and T3 stimulation which highlights the role of epithelial cells in shaping inflammatory responses of the airways. Defining pathways of epithelial immune modulation may contribute to the understanding of the immune-driven heterogeneity of asthma.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000061
Prefix: P05

BIOLOGICS AND SMELL RECOVERY

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BACKGROUND

Patients with severe asthma and chronic rhinosinusitis with nasal polyps (CRSwNP) frequently experience significant olfactory dysfunction, which negatively impacts quality of life and is often resistant to conventional therapies. Biologic therapies targeting type 2 inflammation, such as: tezepelumab, dupilumab, mepolizumab, benralizumab, and omalizumab, offers a new approach to managing this symptom. This study aimed to evaluate the efficacy of these biological drugs in restoring olfactory function in patients suffering from both severe asthma and CRSwNP.

METHOD

A prospective cohort analysis was conducted across Allergology Department's patients, involving adult patients diagnosed with different phenotypes of severe asthma. Patients received one of the approved biologics (tezepelumab, dupilumab, mepolizumab, benralizumab, or omalizumab) according to clinical indication. Olfactory function was assessed using validated smell identification test (Smell test) at baseline(V0) and after 1(V4), 6(V24), 12(V52) and 24(V104) months of treatment. Additional data collected included Sinonasal outcome 22 (SNOT 22), asthma control (ACQ), Asthma Quality of Life Questionnaire (mAQLQ) tests, biomarkers (blood eosinophils, FeNO) and respiratory function tests (oscillometry and spirometry).

RESULTS

Among 49 patients (mean age 53.67, 55,1% female) a decrease in eosinophilia was observed between V0, V4 and V24 visits. In addition, ACQ differed significantly between all the visits. Quality of life improved as observed at V0 relative to visits V4, V24 and V52. With dupilumab, improvements in quality of life and asthma control were observed between V0, V4 and V24. With tezepelumab, improvements in quality of life were observed between V0, V4 as well V24. Benralizumab treatment at V4 and V52 resulted in significant reductions in eosinophils, as well as improvements in disease control and quality of life as seen at V24 and V52 as compared to V0. In

the whole group, there was no significant effect of biological therapy on olfactory function as measured by Smell test, while SNOT22 differed significantly between V0 and V4. After stratification by drug, we found that there was a significant difference in SNOT 22 values between the V0 and V4, and V0 and V24 in patients treated with dupilumab, as well as between V0 and V4 for patients treated with tezepelumab. No significant differences in olfactory function or quality of life related to sino-nasal symptoms were observed for the other drugs.

CONCLUSION

Biological therapies targeting type 2 inflammation result in meaningful improvement of sino-nasal symptoms in patients with severe asthma, particularly dupilumab and tezepelumab. These findings support the integration of olfactory outcomes into treatment monitoring and further validate the role of biologics in addressing sinonasal symptoms in type 2 inflammatory disease.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000030
Prefix: P07

THE SIGNIFICANCE OF EOSINOPHIL LOCATION IN SEVERE ASTHMA AND INSIGHTS FROM INDUCED SPUTUM: A CASE REPORT

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BACKGROUND

Blood eosinophil counts do not always accurately reflect airway Th2-driven inflammation due to their diurnal variation, limited specificity for asthma, and generally non-activated state. In adults with asthma, elevated blood baseline eosinophil levels can help predict response to anti-Th2 biologics, yet have limited utility in monitoring response to treatment. Induced sputum analysis provides a more direct assessment of airway inflammation and can distinguish eosinophilic from non-eosinophilic exacerbations.

METHOD

A 66-year-old woman was evaluated for severe adult-onset asthma, presenting with chronic cough and two yearly exacerbations requiring systemic corticosteroids. She was non-atopic, with nasal polyposis, GERD, chronic laryngopharyngitis and mild bronchiectasis. Her FEV1 was 1750 ml (77%), FeNO >100 ppb and blood eosinophilia 910 cells/μL. Mepolizumab was initiated. At follow up after two years she had significant clinical improvement, no exacerbations, FEV_1 increased to 2770 mL (129%), with FeNO remaining >100 ppb and blood eosinophils reduced to 70 cells/μL.

In the third year, her asthma remained stable (FEV_1 105%, no exacerbations), but chronic cough recurred. Reassessment showed FeNO >100 ppb, blood eosinophils 220 cells/μL, total IgE 105 IU/mL, no sings of ABPA. Inhaler adherence was 90% with correct technique. ENT evaluation revealed ongoing GERD; gastroscopy showed a hiatal hernia. Despite PPI therapy, the cough persisted. Induced sputum was performed to assess eosinophilic airway inflammation.

RESULTS

Induced sputum analysis revealed 30% eosinophils, 34% neutrophils, 18% mononuclear cells, 18% plasma cells, and presence of Charcot-Leyden crystals—indicating active airway eosinophilia despite ani-IL5 therapy. Given these findings, we switched her to anti IL-5R therapy. One month later, cough completely improved, peripheral eosinophils were undetectable, FEV_1 increased to 2910 mL (138%), and induced sputum showed no eosinophils.

CONCLUSION

While raised blood eosinophil counts are helpful in phenotyping, they are not reliable for monitoring treatment response. Induced sputum analysis proved essential in detecting persistent airway eosinophilic inflammation despite clinical stability and normal lung function, guiding a successful switch in biologic treatment. Persistent airway eosinophilia despite anti-IL5 treatment suggests that local, rather than systemic, eosinophil production is driving the inflammation. Assessment of airway inflammation may be warranted in patients with unresolved symptoms.

CONFLICTS OF INTEREST

The author received lecture fees from Berlin-Chemie and Chiesi.

Submission number: 000077
Prefix: P08

MEPOLIZUMAB 100 MG FOR EGPA: EFFICACY IN MANAGING CONCOMITANT SEVERE ASTHMA

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BACKGROUND

Mepolizumab is an anti-IL5 monoclonal antibody recently approved in Italy for the treatment of eosinophilic granulomatosis with polyangiitis (EGPA) at a monthly dose of 300 mg. However, the 100 mg monthly dose was previously approved for severe asthma.

METHOD

This study evaluated a cohort of patients with EGPA and severe steroid-dependent eosinophilic asthma treated with mepolizumab 100 mg every four weeks—administered before the 300 mg dose was available. Patients, who had persistent severe asthma despite being in vasculitis remission, had baseline demographics and clinical characteristics recorded. Evaluations included the Birmingham Vasculitis Activity Score (BVAS), daily prednisone dose, concomitant immunosuppressive drug use, peripheral eosinophil count, ANCA status, FEV_1% predicted, FeNO, and ACT scores, as well as asthma exacerbation and hospitalization rates. Measurements were taken at baseline and at 6, 12, 18, and 24 months. Repeated measures ANOVA and Cox regression were used to analyze temporal changes and the impact of baseline BVAS, prednisone dose, and ANCA status on the time to discontinuation of immunosuppressants, with remission at 24 months defined as BVAS = 0 and prednisone ≤4 mg daily per MIRRA criteria.

RESULTS

Among the 36 enrolled patients, six discontinued mepolizumab during the two-year period. At treatment initiation, no patient was in remission; by months 12 and 24, 10 of 36 patients met the remission criteria. BVAS scores significantly decreased over time. A higher prednisone dosage was paradoxically associated with a significant reduction in BVAS (with each additional 1 mg/day lowering the odds of a higher BVAS category by 4.7%). Concurrently, both blood eosinophils and daily prednisone doses fell markedly, and there was a significant reduction in the proportion of patients on additional immunosuppressive therapy. Importantly, no significant differences were noted between ANCA-positive and -negative patients.

CONCLUSION

Mepolizumab at the 100 mg dosing schedule leads to substantial reductions in daily prednisone requirements and blood eosinophil counts, thus contributing significantly to disease remission in EGPA patients with severe asthma. The study suggests that an “asthma-tailored” dosing regimen may offer a viable long-term management strategy for this patient subset, although some individuals with severe or life-/organ-threatening disease may require higher doses. Additionally, the potential for discontinuing immunosuppressants over time appears to be influenced by baseline disease severity, independent of initial prednisone dosage.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000075
Prefix: P09

REAL-LIFE EVALUATION OF BIOLOGICALS IN SEVERE T2 ASTHMA: A STUDY OF THE BIOBADALER CONSORTIUM

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BACKGROUND

Some individuals with severe asthma (SA) fail to achieve control with thehighest dose of inhaled corticosteroids (ICS). Among those, some exhibit T2inflammation and may be eligible for biologicals. This study aims to investigate clinicalpredictors of biological prescription in T2 SA patients, and the effect of four availabletreatments (Omalizumab-OMA, Mepolizumab-MEPO, Benralizumab-BENRA andDupilumab-DUPI) in this population during the first year of treatment.

METHOD

318 patients with T2 SA were recruited in the 8 Spanish centres of theBIOBADALER consortium. SA and T2 inflammation were defined according with GINAcriteria. Clinical and analytical data were obtained from electronic health records atbaseline and every 3 months in those receiving biologicals (n=231; OMA=162,MEPO=97, BENRA=37, DUPI=35) during the study period and entered in a RedCap©database. Data was collected in an ambispective manner.

RESULTS

The predictors of the need for biologicals were CRSwNP(p<0.001), NERD (p=0.032), GERD (p=0.005), and cardiovascular disease (p=0.014). Conversely, atopy,food allergy, atopic dermatitis, obesity and ACOS did not influence the prescription ofbiologicals. At baseline, patients receiving all biological drugs had comparable featuresexcept for the cumulative oral corticosteroid (OCS) dose which was lower in OMAgroup (p<0.05). During the first year of therapy, exacerbation rates significantlydecreased in all four treatment groups, whereas the decrease in OCS intake was onlysignificant in OMA and MEPO groups. ACT improved in all groups, while FEV1increased only in MEPO and BENRA groups. Interestingly, DUPI-treated patientsdecreased their ICS dose during the study period.

CONCLUSION

Respiratory and extra-respiratory comorbidities influence biologicalprescription in SA patients. All biologicals may have differential effect over relevantclinical outcomes in SA patients.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000036
Prefix: P10

DUPILUMAB AND TEZEPELUMAB – A HEAD-TO-HEAD COMPARISON OF CLINICAL EFFECTIVENESS AND TYPE 2 BIOMARKER CHANGES IN SEVERE ASTHMA PATIENTS

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BACKGROUND

Recent advances in biologic therapies have greatly improved outcomes in patients with severe asthma. However, differences in their mechanisms of action may lead to variable clinical outcomes across asthma endotypes.

METHOD

To prospectively compare clinical outcomes, pulmonary function, and biomarker responses, we evaluated 20 patients with severe eosinophilic asthma initiating dupilumab or tezepelumab treatment at our facility. Assessments were performed at baseline, 4 weeks, and 6 months, including medical history, FeNO, spirometry, and peripheral blood counts. Analyses were conducted between treatment groups and within subgroups stratified by baseline FeNO levels.

RESULTS

Thirteen patients received dupilumab and seven tezepelumab. Both groups showed significant improvement in ACQ and mini-AQLQ scores, as well as a reduction in FeNO levels. However, trajectories differed: while 6-month outcomes were similar, the dupilumab group showed significantly greater ACQ improvement after 4 weeks ($p < 0.05$; effect size = –1.08). Among low-FeNO patients, FEV_1 declined over weeks 4–24 in the tezepelumab group but remained stable or improved in the dupilumab group ($p < 0.05$; effect size = 2.15). Only one tezepelumab-treated patient had marked eosinophilia, raising concerns about baseline imbalance. To account for this, we compared low-eosinophil subgroups in both treatments and confirmed previous results.

CONCLUSION

While long-term clinical effectiveness was similar for both biologics, dupilumab was faster to improve asthma control based on ACQ scores. Notably, low-FeNO patients on tezepelumab showed signs of lung function decline over 6 months, a pattern not observed in dupilumab, suggesting possible endotype-specific differences in response.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000033
Prefix: P11

PERSISTENT REMISSION OF CHRONIC RHINOSINUSITIS WITH NASAL POLYPS AFTER DUPILUMAB DISCONTINUATION: A CASE REPORT

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BACKGROUND

Dupilumab is an effective treatment for chronic rhinosinusitis with nasal polyps (CRSwNP), improving symptom control and quality of life. However, limited data exist on the persistence of its therapeutic effects after discontinuation. We report a case of sustained disease control after dupilumab withdrawal due to the diagnosis of HER2-positive breast cancer and the initiation of trastuzumab.

METHOD

A 65-year-old woman with a history of familial hypercholesterolemia and no asthma, atopy, or NSAID intolerance presented with CRSwNP. She had undergone Functional Endoscopic Sinus Surgery (FESS) in 2007, but relapsed with severe nasal obstruction and hyposmia. MRI showed bilateral maxillary and ethmoidal polypoid tissue. She had a nasal polyp score (NPS) of 6, a sino-nasal outcome test (SNOT-22) of 66 out of 110, and olfactory visual analogue scale (VAS) of 9/10. Despite cycles of oral corticosteroids (OCS) and continued intranasal corticosteroid therapy, there was no improvement so dupilumab was initiated.

RESULTS

After one month of dupilumab treatment, the patient showed marked clinical improvement (NPS 2, SNOT-22 14, VAS 5). By month 3, NPS was 0, SNOT-22 7, and VAS 2. The improvement was sustained through month 18 with NPS 0, VAS 0, and SNOT-22 ranging between 7 and 13. The patient was subsequently diagnosed with right-sided mucinous breast carcinoma. She underwent surgery followed by adjuvant chemotherapy with taxanes, radiotherapy, and initiation of trastuzumab. Dupilumab was discontinued prior to the start of trastuzumab to avoid potential interference between monoclonal antibodies. During the first months after discontinuation, she received a short course of OCS prescribed by the oncology team, while continuing the use of intranasal corticosteroids. At regular follow-ups up to 18 months post-dupilumab, nasal polyps remained undetectable (NPS 0), olfaction was preserved (VAS 0), and SNOT-22 scores ranged from 8 to 21. Blood eosinophil counts remained stable throughout.

CONCLUSION

This case suggests that sustained control of CRSwNP may be possible in selected patients after discontinuation of dupilumab. Although dupilumab is currently considered a life-long therapy, this

observation raises the question of whether tapering or treatment interruption may be feasible in some cases. Further studies are needed to better define the long-term management strategies.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000031
Prefix: P12

TAPERING OF BIOLOGICS IN CRSWNP – A NATIONWIDE RCT

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BACKGROUND

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a debilitating disease that impairs quality of life and incurs substantial societal costs. Traditional treatments—nasal saline irrigation, corticosteroids, and endoscopic sinus surgery—often provide limited long-term control for the most severely affected patients and carry significant risks. Biologic therapies like dupilumab and mepolizumab have revolutionized management of severe CRSwNP, but their high costs necessitate sustainable treatment strategies. Evidence from asthma management suggests that extending dosing intervals can maintain efficacy while reducing treatment burden. This study investigates whether an objective- and symptom-driven extension of biologic dosing intervals, after an initial stable treatment phase, can sustain disease control in CRSwNP.

METHOD

This investigator-initiated, independent, national, multicenter, randomized, controlled, non-inferiority trial compares extended dosing intervals versus 4-week dosing of mepolizumab (100 mg) or dupilumab (300 mg) in patients with CRSwNP. Approximately 135 patients will be recruited from ENT departments across Denmark. Eligible patients are aged ≥18 years, have received stable 4-week dosing for ≥3 months, and achieved partial disease control for at least one year. Participants are randomized 1:1 to either extended dosing (6 weeks at baseline, then 8 weeks at week 26 if disease control persists) or continued 4-week dosing intervals. Clinical assessments occur at weeks 0, 12, 26, 38, and 52, including endoscopic rhinoscopy and patient-reported outcomes (VAS, SNOT-22, WPAI, ACQ). The primary endpoint is the proportion of patients maintaining partial disease control. Secondary endpoints include changes in quality-of-life measures, comparison between the two biologics, and identification of baseline predictors of sustained control.

RESULTS

Patients are currently being included. Analyses will evaluate whether extended dosing intervals maintain disease control comparable to 4-week dosing intervals while potentially reducing medication burden.

CONCLUSION

This randomized controlled trial aims to generate real-world evidence on extended dosing intervals for biologic therapies in CRSwNP, potentially improving cost-effectiveness and maintaining clinical efficacy.

CONFLICTS OF INTEREST

EMS has nothing to declare. KA has provided support for advisory boards for AstraZeneca, Sanofi and GSK regarding biologic medication outside the submitted work. CKP has attended a congress on sinonasal diseases paid by Sanofi (via an invitation addressed to the department), attended a cadaver course in FESS surgery upon invitation from Stryker (via an invitation addressed to the department), and received speaker honoraria for presentations from GSK and Sanofi outside the submitted work. TKP has nothing to declare. VB has received personal fees from AstraZeneca, GSK, TEVA, Sanofi Genzyme, MSD, Chiesi, Boehringer Ingelheim, Novartis, ALK-Abello, Mundipharma, BIRK NPC, Menarini and Pharmaxis, outside the submitted work. CvB has lectured MSD Denmark on the relationship between HPV and oropharyngeal cancer, outside the submitted work.

TOPIC 1: ASTHMA, CRSwNPs AND EGPA - SUBGROUP 2

Submission number: 000091
Prefix: P14

MOLECULAR PREDICTORS OF ALLERGEN-SPECIFIC IMMUNOTHERAPY EFFICACY IN PATIENTS WITH YEAR-ROUND RHINITIS AND SENSITIZATION TO HOUSE DUST MITES

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BACKGROUND

Allergic rhinitis (AR) and asthma are the most common allergic disorders worldwide. Aeroallergens are a critical causative factor in the pathogenesis of these disorders and sensitization to aeroallergens differs in various countries and regions. Identification of the most common aeroallergen sensitization is crucial in the diagnosis and management of AR and asthma. Allergen-specific immunotherapy (AIT) is the only available treatment that can induce specific immune tolerance to allergens. However, the treatment course lasts 18 months, and there is no reliable method to predict treatment response. Therefore, in this study we aimed to establish a method that can predict treatment response to AIT.

METHOD

This prospective study enrolled 110 patients who had undergone 18 month of standard-quality house dust mite AIT with sublingual forms of house dust mite allergens (D.pteronissinus 50%, D.farinae 50%). During the study, patients were divided into two groups: **group 1** - patients with sensitization only to major components of the house dust mite (Der p1, Der p2), n= 74; **group 2** - patients with sensitization to the major and minor components (Der p1, Der p2, Der p6, Der p10), n= 36. Clinical characteristics, skin-prick test response, and treatment response were evaluated at months 12 and 18. Effective AIT was defined as a 50% reduction in average adjusted symptom score (AAdSS) from baseline at the end of the second year of immunotherapy or in some cases negativation of skin prick tests.

RESULTS

The overall efficacy rate at the end of 12 month of the AIT was 52.7% in group 1 and 25.6% in group 2. Age, sex, asthma, body mass index, smoking history, and aeroallergen categories were not associated with efficacy of AIT. Meanwhile, efficacy data at month 12 (odds ratio [OR], 5.850; $p = 0.003$), month 18 (OR, 7.476; $p < 0.001$) in group 1, and month 12 (OR, 4.130; $p < 0.004$), and month 18 (OR, 8.716; $p < 0.000$) in group 2.

CONCLUSION

Efficacy of AIT at months 12 and 18 is strongly associated with sensitization only to major components of the house dust mite (Der p1, Der p2). Efficacy of AIT can predict before the treatment by the determination of Der p6 and Der p10 sensitization and may help to determine the need for long-term treatment. Our findings may be useful for identifying novel treatment strategies for AIT.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000087
Prefix: P16

PERICARDITIS ASSOCIATED WITH DUPILUMAB-INDUCED EOSINOPHILIA: A CASE REPORT

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BACKGROUND

Dupilumab is a monoclonal antibody targeting the interleukin-4 receptor alpha subunit, inhibiting signalling of both IL-4 and IL-13—key cytokines involved in Th2 inflammation. Transient eosinophilia has been observed in 14%-42% of patients during dupilumab treatment and eosinophil counts decreased from week 24 onward. This phenomenon is thought to result from the inhibition of IL-4 and IL-13 signalling, which may temporarily alter eosinophil trafficking and tissue homing, leading to a transient increase in circulating eosinophil counts. However, in some cases, elevated eosinophil levels may lead to tissue infiltration and organ damage.

METHOD

A 74-year-old woman with severe eosinophilic asthma and comorbid nasal polyposis (peripheral eosinophils up to 1320 cells/µL) was started on dupilumab in January 2025 due to frequent exacerbations. She had no history of allergic rhinitis or aspirin intolerance. Immunophenotyping showed elevated total IgE (358 IU/mL), with negative specific IgE and IgG to fungi. The patient responded well to dupilumab, reporting marked improvement in asthma control and nasal symptoms within the first month. At routine follow-up in May 2025, she presented with peripheral eosinophilia (10640 cells/mL, 52.6%) and mild chest pain but was otherwise asymptomatic.

RESULTS

Further evaluation revealed a pericardial effusion with signs of pericarditis on transthoracic echocardiography, though no changes were observed on ECG. Cardiac enzymes were within normal range, effectively excluding myocarditis. Other causes of peripheral eosinophilia, including

parasites and EGPA were ruled out. ANCA was negative. There were no skin lesions, renal function impairment, neurological symptoms or lung infiltrates. The patient was diagnosed with eosinophilic pericarditis likely related to dupilumab treatment.

Dupilumab was discontinued, and treatment with systemic corticosteroids and colchicine was initiated. At follow-up four weeks later, the patient was asymptomatic, eosinophil count had normalized (1%, 100 cells/mL), and cardiac ultrasound showed resolution of the effusion. Cardiac MRI confirmed absence of myocarditis.

CONCLUSION

While dupilumab is generally well tolerated, rare but serious adverse events such as hypereosinophilia with organ involvement can occur. Close monitoring of peripheral eosinophil counts is essential during the early phases of treatment. If significant eosinophilia is detected, a thorough evaluation should be performed to exclude potentially serious complications.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000041
Prefix: P17

ANALYSIS OF POSSIBLE FACTORS ASSOCIATED WITH RESOLUTION OF FIXED OBSTRUCTION AFTER TREATMENT WITH MONOCLONAL ANTIBODY FOR SEVERE ASTHMA

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BACKGROUND

Asthma is a chronic disease generally defined by reversible airflow obstruction after bronchodilation. Several people with severe asthma (SA) exhibit a fixed obstructive deficit resulting from airway remodelling, which is characterised by the disruption of airway epithelial integrity, subendothelial fibrosis, hyperplasia/metaplasia of goblet cells, hyperplasia/hypertrophy of smooth muscle, and enhanced vascularisation. The mechanisms underlying the genesis of remodelling remain incompletely understood: various environmental insults inflict damage on airway epithelial tissue, resulting in the release of alarmins and cytokines such as IL-4, IL-5, IL-13, and TGF-beta, which act directly or indirectly through the activation of effector cells. Although perspectives on the impact of inhaled therapy on airway remodelling differ, numerous studies indicate that monoclonal antibodies (mAb) approved for SA treatment may contribute to preventing and reversing this process. The objective of our study is to assess the possible factors of fixed obstruction resolution by comparing two groups of individuals with severe asthma undergoing mAb treatment.

METHOD

We enrolled 23 patients affected with SA associated with fixed obstruction who were treated for a minimum of 24 months with Omalizumab, Mepolizumab, Benralizumab, or Dupilumab. Group A comprised 13 patients who exhibited airway reversibility following monoclonal antibody treatment, while Group B included 10 individuals who maintained fixed obstruction. We compared the two groups for age, sex, duration of disease, comorbidities, pulmonary function tests, blood eosinophil counts, annual exacerbation rates, oral corticosteroid use, incidence of severe airway infections, and medical treatment.

RESULTS

In our retrospective real-life single-center study, the two groups were comparable in age and sex. When comparing the two groups for years of pre-biological disease, smoking, baseline absolute FEV1, baseline FEV1%, pre- and post-reversibility delta FEV1, baseline absolute FVC, baseline FVC%, pre- and post-reversibility delta FVC, presence of chronic rhinosinusitis with or without polyposis (CRSwNP or CRSsNP), obstructive sleep apnea syndrome (OSAS), eosinophilic granulomatosis with polyangiitis (EGPA), diagnosis of asthma/COPD overlap (ACO), bronchiectasis, baseline eosinophils, pre-mAB asthma exacerbations, and severe lower respiratory tract infections, we found no statistically significant differences. The limitations of our study are the small number of patients, the fact that it was retrospective, monocentric and not randomized.

CONCLUSION

Our study highlights the absence of an identifiable biomarker that may predict which individuals will achieve resolution of fixed obstruction and which will not.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000050
Prefix: P18

PRELIMINARY EVALUATION OF A COHORT OF ITALIAN PATIENTS THAT EXPERIENCED SWITCHING BIOLOGICS IN ASTHMA

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BACKGROUND

Biologic therapies have transformed the management of asthma and other Th2-mediated diseases. Patient phenotyping, including inflammatory biomarker assessment, is essential for selecting the most appropriate biologic. However, suboptimal response may require therapeutic switching.

METHOD

We collected clinical, anamnestic, and instrumental data from 28 patients with asthma who initiated biologic therapy and subsequently switched. Exacerbations and reasons for treatment switching were recorded. We analyzed blood tests (eosinophil count, total IgE, ECP), spirometry (FEV1, FVC, MMEF), fractional exhaled nitric oxide (FeNO), and patient-reported outcomes (ACT, SNOT-22).

RESULTS

The cohort included 57% females, the most frequent switch was from dupilumab to mepolizumab (25%), followed by omalizumab to dupilumab (17.9%) and to mepolizumab (17.9%), then mepolizumab to dupilumab (7.1%) and to tezepelumab (7.1%). A second switch occurred in 1.4%, mainly to dupilumab, followed by mepolizumab and tezepelumab. CRSwNP was present in 78% of patients; 57% were sensitized to aeroallergens, and 10% had OSAS. Baseline non-reversibility was seen in 59%. Median duration on first biologic was 22 months; on the second, 11 months. Median baseline values: FeNO 59 ppb, eosinophils 500 cells/μL, ECP 58,5 μg/L. Among patients with exacerbations requiring OCS under the first-line biologic, 50% were on benralizumab; among those with exacerbations not requiring OCS, 58.8% were on omalizumab. One year after the first switch, 26% experienced OCS-requiring exacerbations, and 13% had exacerbations without OCS use. From baseline to one year on biologic therapy, ACT and FEV1 significantly improved, and SNOT-22 decreased. A positive correlation was observed between longer first-line biologic duration and FEV1 improvement, a trend not observed after switching ($p > 0.05$). This suggests a plateau effect, with spirometric improvement occurring predominantly during the first year of biologic therapy. The main reason for switching was exacerbations and apparent loss of efficacy; drug-related adverse events are the secondary cause.

CONCLUSION

Study limitations include the small sample size and the retrospective collection of data. Further analyses are needed to assess clinical trajectories after switching and identify predictors of treatment failure.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000008
Prefix: P19

AN ATYPICAL CASE OF HYPEREOSINOPHILIA

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BACKGROUND

A 64-year-old woman with untreated asthma, hypertension, hyperlipidemia, depression, and back pain presented with dyspnoea, pleuritic chest pain, and dry cough. Symptoms had worsened over two weeks. Physical exam was unremarkable; no wheezing, fever, rash, or weight loss were noted. Elevated D-dimer (7800 µg/L) prompted CTPA, which excluded embolism but showed non-specific interstitial infiltrates. With mildly elevated inflammatory markers, normal pro-BNP, and eosinophilia (2.9×10^9/L), eosinophilic pneumonia was suspected, and she was admitted for further evaluation.

METHOD

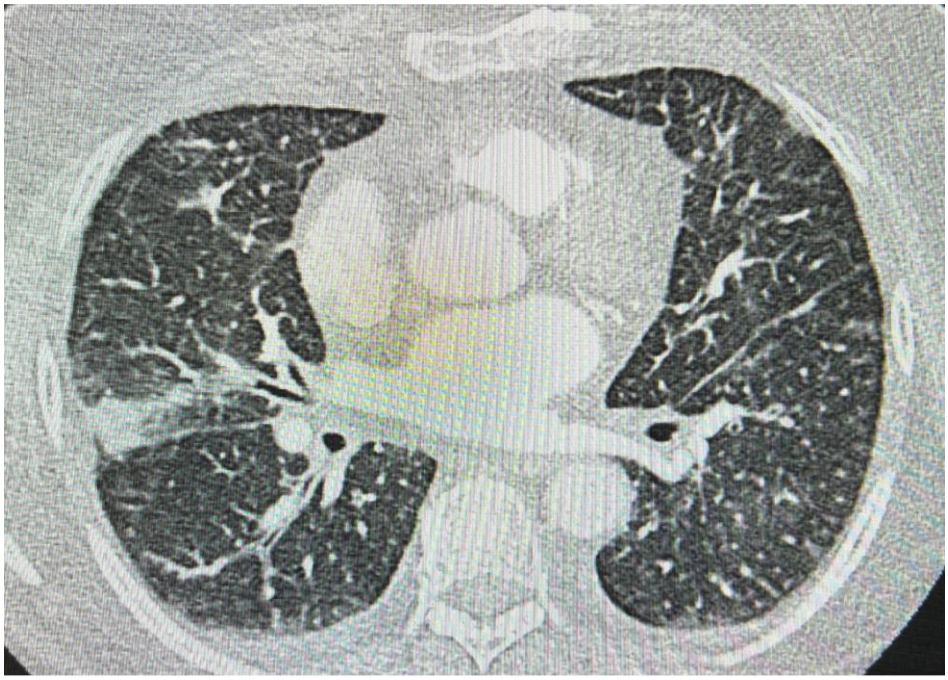
Pulmonary function revealed obstruction (FEV1 1.4 L, 57%; Tiffeneau 58%) with bronchodilator responsiveness. Bronchoscopy with biopsy was unremarkable; BAL showed mild eosinophilia (4%). Rheumatological markers were negative except mildly elevated CEA. IgG for *Toxocara* and *Strongyloides* was positive, but active infection was ruled out. Eosinophils rose to 3.85×10^9/L without radiologic progression. Troponin was negative; echocardiography revealed mild diastolic dysfunction. Due to elevated LDH (9.42 µkat/L), bone marrow biopsy was performed. Subsequently, the patient developed abdominal and back pain, high CRP (330 mg/L), and PCT (1.58 µg/L). Imaging excluded infection but showed vertebral changes. Empirical antibiotics, albendazole and ivermectin were initiated. PET/CT identified skeletal metastases without primary origin.

RESULTS

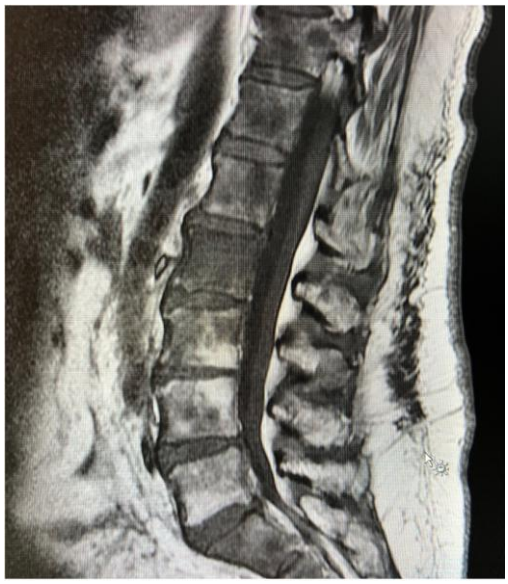
Following antibiotic therapy, inflammatory markers improved. Due to respiratory decline, a short course of methylprednisolone was given, resulting in clinical improvement. Bone marrow histology showed 30% eosinophils and adenocarcinoma metastasis with signet ring cell morphology, suggesting upper GI origin. Gastroscopy was unremarkable. On re-evaluation, the patient recalled a rectal polypectomy 2 years ago revealing a 2 mm focus of signet ring cell carcinoma. Follow-up endoscopies had been negative, eosinophil count, however, was gradually increasing in the past year. She was discharged from our unit with eosinophil count 2.45×10^9/L and referred to oncology for outpatient palliative management. She passed away a few weeks later.

CONCLUSION

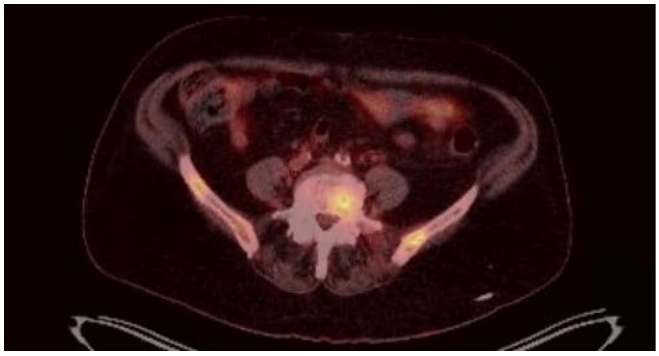
Hypereosinophilia, defined as eosinophils $>1.5\times10^9$/L, can result from secondary causes including malignancy. In solid tumors, it is rare and most often linked to mucin-producing adenocarcinomas. Non-myeloid cancers may trigger eosinophilia via cytokines such as IL-3, IL-5, and GM-CSF. Signet ring cell carcinoma is an exceptionally rare cause, with only a few cases reported. Interestingly, in a study of gastric cancer samples, GM-CSF expression was found in all signet ring cell cases, potentially explaining the eosinophilic response. This case emphasizes the diagnostic value of comprehensive patient history in challanging clinical situations.



CTPA revealed nonspecific interstitial infiltrates.



Spinal MRI revealed pathologically altered vertebral bone density with no clear focus of infection.



PET/CT identified skeletal metastases with no identifiable primary origi

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000035
Prefix: P20

EARLY-ONSET EOSINOPHILIC GRANULOMATOSIS WITH POLYANGIITIS (EGPA) IN AN 18-YEAR-OLD: SUCCESSFUL TREATMENT WITH BENRALIZUMAB

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BACKGROUND

Eosinophilic Granulomatosis with Polyangiitis (EGPA) is a rare eosinophil-associated vasculitis, particularly uncommon in pediatric and young adult populations. It typically presents with asthma, eosinophilia, and systemic vasculitic manifestations. Early recognition and targeted treatment are essential to improve outcomes.

METHOD

An 18-year-old female with a history of scoliosis surgery, chronic rhinosinusitis, and eosinophilic asthma was hospitalized for evaluation of worsening asthma symptoms, despite regular treatment with ICS+LABA.

RESULTS

Initial spirometry demonstrated a mixed ventilatory defect (FVC 73%, FEV1 76%, FEV1/FVC 73%) with positive bronchodilatory response. Laboratory tests revealed marked eosinophilia (4600 cells/µl), and elevated IgE (1460 IU/mL). Sputum cytology showed 64% eosinophils. Skin prick tests for inhalant allergens were negative. Parasitic infection and hematologic disorders were

excluded. On the third day of hospitalization, she developed palpable purpura on the lower legs. Skin biopsy confirmed vasculitis with eosinophilic infiltration. Chest CT revealed peripheral ground-glass opacities. Immunologic testing showed positive p-ANCA and anti-MPO antibody titer >200 RU/mL. A diagnosis of EGPA was established based on the presence of asthma, chronic rhinosinusitis, eosinophilia, pulmonary and skin vasculitis, and positive serology. Notably, there was no renal or peripheral nervous system involvement. Initial treatment with systemic corticosteroids led to partial improvement but eosinophil levels rebounded (3800 cells/µl) during tapering. Due to the unavailability of mepolizumab, benralizumab, an anti-IL-5 receptor monoclonal antibody, was initiated using the standard asthma dosing regimen. Following the first dose, eosinophils dropped to 0.0 cells/µl. Subsequent evaluations demonstrated improved lung function (FVC 88%, FEV_1 91%), an increase in the Asthma Control Test score from 17 to 22, and a significant reduction in anti-MPO antibody titers (to 4.8 RU/mL).The corticosteroids were successfully tapered without relapse.

CONCLUSION

This case underscores the importance of considering EGPA in young patients with asthma and eosinophilia, especially when systemic signs of vasculitis are present. It also highlights benralizumab as an effective alternative to mepolizumab in the management of EGPA. Early intervention with biologic therapy can lead to marked clinical improvement and steroid-sparing benefits in this rare and complex condition.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000054
Prefix: P21

EFFECTIVENESS OF RESLIZUMAB IN THE MANAGEMENT OF SEVERE EOSINOPHILIC ASTHMA: EXPERIENCE FROM A SINGLE CENTRE

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BACKGROUND

Elevated blood and sputum eosinophil levels are linked to increased asthma severity and more frequent exacerbations. Targeting interleukin-5 (IL-5) has emerged as an effective approach for managing severe eosinophilic asthma.

METHOD

Since late 2023, five patients with severe eosinophilic asthma were initiated on Reslizumab in our clinic. Safety and efficacy were evaluated regularly over a 12-month period. ‘Partial remission’

was defined as no need for maintenance oral corticosteroids (OCS), Asthma Control Test (ACT) >20, Asthma control questionnaire-6 (ACQ-6) <1.5, and fulfillment of two of the following: no symptoms, no exacerbations, stable lung function. 'Complete remission' is defined similarly but requires fulfillment of all three criteria (Canonica et al., 2023).

RESULTS

At baseline, the mean ACT score was 12, and ACQ-6 was 3.4. The average number of exacerbations in the year preceding treatment was more than 5 per person. All patients had at least one hospitalization in the year prior to therapy (mean 1.6 admissions/year). Four out of five patients required long-term OCS, with an average daily dose of 21 mg prednisolone. Baseline FEV1 averaged 51.8%, and blood eosinophil count averaged 1390 cells/μL. After one year of treatment, we observed marked clinical improvements. ACT increased to 19.6, and ACQ-6 decreased to 1.6 ($p = 0.043$). Exacerbation rate dropped to 0.4/year ($p = 0.039$). All of the patients discontinued OCS completely. FEV1 improved to 81.6%, an increase of nearly 30% ($p = 0.043$). Blood eosinophils dropped to zero in all patients ($p = 0.042$), indicating complete suppression of eosinophilic inflammation. Based on previous definitions, one patient achieved complete remission, and another one showed partial remission.

CONCLUSION

Reslizumab was well tolerated, with no recorded adverse effects or treatment discontinuations. Our findings support its use in severe eosinophilic asthma, showing improved control, reduced exacerbations, steroid withdrawal, and suppression of eosinophilic inflammation.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000023
Prefix: P23

PREVALENCE OF T2 ASTHMA IN THE ELDERLY POPULATION

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BACKGROUND

Asthma in the elderly is often misdiagnosed or not treated properly, and phenotyping is rarely carried out. Unfortunately, asthma phenotyping in older age groups remains uncommon. This study was designed to assess asthma phenotypes and characteristics in elderly people in southern Poland.

METHOD

A prospective, observational, multicentre study analysed 345 over 60years patients with a final diagnosis of asthma due to GINA criteria. Patients were phenotyped for T2 asthma based on the following biomarkers: eosinophils (>150/µl), FeNO (>20 ppm), IgE (70 kU/L), number of eosinophils in sputum: ≥2%. Clinical features of atopic diseases were also present. Spirometry and ACT wereperformed simultaneously. A control group of volunteers without obstructiverespiratory diseases in the same age group was used for the study.

RESULTS

The study patients were phenotyped for T2 asthma based on previously presented and measured biomarkers. T2 asthma was present in 174 patients, low T2 in 114 patients, and a mixed phenotype in 57 patients. Additionally, aspirin-induced asthma was confirmed in 21 patients. In the entire analysed group of asthmatics, the following median biomarker values were obtained: eosinophils=192/µL, IgE=137kU/L and FeNO=32 ppb, which were significantly higher than those in patients without asthma in the same age group: 112/µL, 76 kU/L and 19.8 ppb ($p < 0.05$). Patients with asthma had a higher prevalence of multimorbidity and significantly higher rates of depression and/or cognitive impairment. The mean FEV1 values for the entire asthmatic population were 84% (±16.8%) of the expected norm and 1.98 l/s (±0.79).

CONCLUSION

The predominant asthma phenotype in older adults is T2 asthma, but it is sometimes difficult to determine whether a patient has a mixed form of the disease. This group frequently exhibited a lack of disease control.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000034
Prefix: P24

BENRALIZUMAB IN A PATIENT WITH SEVERE MIXED-PHENOTYPE ASTHMA AFTER FAILURE OF PREVIOUS BIOLOGICS: A CASE REPORT

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BACKGROUND

Mixed-phenotype asthma, combining eosinophilic and allergic inflammation, poses therapeutic challenges due to its complex pathophysiology. The role of anti-IL-5Rα therapy in such cases remains under evaluation. We present a patient with long-standing severe asthma, nasal polyposis, and allergic sensitization who achieved sustained disease control with benralizumab after failure of both anti-IgE and anti-IL-5/IL-4R biologics.

METHOD

A 68-year-old woman with childhood-onset asthma experienced frequent exacerbations, systemic corticosteroid dependence, and multiple hospitalizations. She had comorbid chronic rhinosinusitis with nasal polyps (30 polypectomies, eosinophilic infiltration), allergic rhinitis (birch, mugwort, PR-10 foods), and steroid-induced hypertension and diabetes. Eosinophil counts were persistently elevated (700–780/μL), with total IgE of 300–450 IU/mL. Prior biologics included omalizumab (no response), dupilumab (transient effect), and mepolizumab (partial and lost response).

RESULTS

Benralizumab was initiated in 2022. Within weeks, the patient achieved full asthma control, discontinued systemic corticosteroids, and reported improved quality of life. There was no recurrence of nasal polyps. Spirometry improved markedly, and blood eosinophils became undetectable.

CONCLUSION

This case illustrates the value of benralizumab in managing mixed-phenotype severe asthma after failure of prior targeted therapies, including both anti-IgE (allergy-directed) and anti-IL-5/IL-4R (eosinophil-directed) biologics. It emphasizes the central role of eosinophils as a final effector cell in both eosinophilic and allergic asthma, often overlooked in stratified treatment models. Benralizumab binds to IL-5Rα and induces antibody-dependent cellular cytotoxicity (ADCC), leading to profound and sustained depletion of eosinophils and basophils. The latter also express IL-5Rα and contribute to allergen-driven responses, reinforcing the drug's relevance in eosinophilic asthma with allergic overlap. Targeting shared downstream mechanisms may be effective in complex phenotypes beyond rigid endotype definitions.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

TOPIC 2: FOOD ALLERGY AND EOE

Submission number: 000082
Prefix: P25

UPADACITINIB AS A SUCCESSFUL THERAPEUTIC OPTION FOR KIMURA'S DISEASE ASSOCIATED WITH ULCERATIVE COLITIS: A CASE REPORT

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BACKGROUND

Kimura's disease is a rare, chronic inflammatory condition characterized by painless subcutaneous masses, often in the head and neck region, accompanied by peripheral eosinophilia and elevated IgE levels.Histologically, it shows follicular hyperplasia, eosinophilic infiltrates, and postcapillary venule proliferation . KD is driven by a Th2-dominant immune response involving IL-4, IL-5, and IL-13, The co-occurrence of Kimura's disease and ulcerative colitis is exceptionally rare and presents significant therapeutic challenges, particularly given the risks associated with prolonged corticosteroid therapy.

METHOD

Case Report:A 33-year-old male with a 7-year history of ulcerative colitis (UC) presented with progressive right cervical lymphadenopathy and facial swelling. Lymph node biopsy confirmed Kimura's disease . Laboratory tests showed peripheral eosinophilia (1,200 cells/μL) and elevated IgE (1,000 IU/mL). Despite treatment with mesalamine, corticosteroids, and multiple biologics , UC remained active. KD symptoms were controlled on prednisolone 20 mg daily but recurred with dose reduction.

Due to corticosteroid dependency and inadequate biologic response, upadacitinib 30 mg daily was initiated with steroid tapering. Within four weeks, both KD and UC symptoms resolved, eosinophil count normalized, and IgE decreased. The patient is now on alternate-day prednisolone 5 mg, with plans to discontinue at the next follow-up. Remission of both conditions has been maintained on upadacitinib 15 mg daily without adverse effects.

RESULTS

Kimura disease is associated with systemic manifestations such as nephrotic syndrome, eczema, Raynaud's phenomenon, and ulcerative colitis. Diagnosis is based on clinical presentation, elevated serum IgE levels, peripheral eosinophilia, and histopathological examination. Treatment options include surgical excision, corticosteroids, cyclosporine, and radiation therapy.

Upadacitinib is a selective Janus kinase 1 inhibitor approved for treating inflammatory bowel disease. It has demonstrated efficacy in various eosinophilic and Th2-mediated inflammatory

disorders, such as eosinophilic colitis and eosinophilic pustular folliculitis. Upadacitinib's mechanism of action involves modulating the Th2-skewed immune response characteristic of Kimura disease by inhibiting interleukin-5 signaling through the JAK-STAT pathway. Previous case reports have highlighted the successful use of JAK inhibitors in managing Kimura disease, particularly in patients with coexisting atopic dermatitis.

CONCLUSION

This is the first reported case of successful upadacitinib use in Kimura's disease coexisting with ulcerative colitis, highlighting the potential of JAK1 inhibitors as a shared treatment for both diseases.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000057
Prefix: P26

EVALUATION OF NKT CELLS IN IHES SYNDROME

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BACKGROUND

Hyper-eosinophilic syndrome (HES) is a disorder characterized by persistent and marked hyper-eosinophilia with the involvement of multiple organs in the absence of parasitic, allergic, or other secondary causes of eosinophilia. Therapeutic approach mainly relies on corticosteroids and/or anti-IL-5 biologics. The prevalence of HES varies significantly based on geographic region, ranging from 0.32 to 6.3 cases per 100,000 people in the United States. Almost half of diagnosed HES is idiopathic (iHES) which is characterized by an unknown cause of the disease. Physicians can rely only on a difficult exclusion diagnosis of the diseases from other inflammatory diseases, cancers, parasite infections and haematological diseases. NKT cells express markers of both T cells and NK cells like CD3 and CD56, bridging innate and adaptive immunity. They are classified into three main subtypes and they can produce Th1 and Th2 cytokines. This feature has been poorly explored in eosinophilic diseases and NKT cells could be new potential and unexplored cause of hypereosinophilia or Th2 inflammation.

METHOD

We enrolled 15 patients affected by iHES. In all the patients we performed T cells (CD3 CD4 CD8) and NKT (CD3 CD56) immunophenotype in order to confirm or exclude iHES diagnosis.

RESULTS

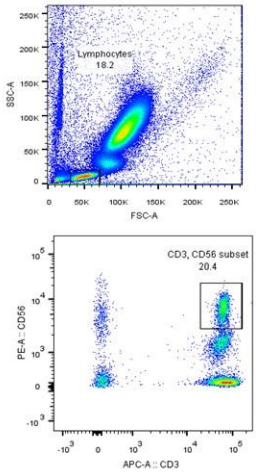
In 8 iHES patients the immunophenotype showed an increased percentage of NKT (CD3+CD56+), in 7 patients NKT were below the normal range (10%). Surprisingly, in some patients followed over the years, the values of NKT cells are not altered by oral corticosteroid or Mepolizumab 300 mg treatment, does not correlate with disease severity and eosinophils number. These are preliminary data show 2 groups of patients with different TNK percentages; therefore, these cells could contribute to unveil a new potential trigger of iHES. The reported data need implementation with other clinical, laboratory parameter and further phenotyping we are going to assess in the next future.

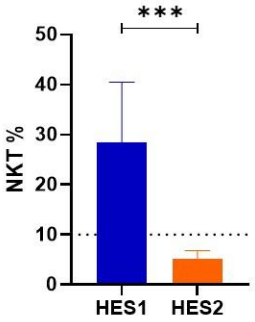
CONCLUSION

This study aimed to further evaluate T cells immunophenotype and NKT cells involvement in iHES in order to provide a better understanding in eosinophilic diseases pathogenesis, trying to find potential biomarkers and/or therapeutic target for people suffering from eosinophils related diseases.

15 iHES patients Immunophenotype

CD3+CD56+	CD3+CD4+	CD4+CD8+
28	54	38
30	71	27
4.2	61	32
6.6	77	20
26	59	40
36	64	31
2	51	44
19	49	46
53	44	51
4	0	31
22	33	63
5.5	67.8	25
13.2	45	51
6	56	40
7	77	19





Patients immunophrnotypes and NKT evaluation

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000059
Prefix: P27

RENAL DISEASE AND EOSINOPHILIA :AN ATYPICAL CASE

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BACKGROUND

Eosinophilia is a key marker of type 2 inflammation and plays a central role in allergic, parasitic, autoimmune, and drug-induced conditions. While commonly associated with pulmonary or dermatologic manifestations, eosinophil-driven diseases can present with isolated organ involvement, complicating diagnosis and management.

METHOD

We report the case of a 37-year-old male with no known atopy who developed progressive renal dysfunction identified during routine evaluation (creatinine 1.4 mg/dL, proteinuria 10 g/24h). Over the following months, renal function declined (creatinine 7.9 mg/dL), with persistent nephrotic-range proteinuria and microscopic hematuria.

During hospitalization, the patient experienced acute pancreatitis and new-onset epilepsy. He developed a febrile rash with pruritus shortly after initiating levetiracetam, with eosinophilia rising to 14.6%. Although the reaction raised concern for DRESS, the RegiSCAR score was insufficient for diagnosis. Despite corticosteroid treatment and partial resolution of symptoms, eosinophilia persisted (AEC 726–1200/mm³) across multiple admissions.

Extensive evaluation ruled out parasitic, fungal, and viral infections, hematologic malignancies, connective tissue diseases, EGPA, and IgG4-related disease. Imaging and endoscopy revealed no evidence of eosinophilic gastrointestinal disorders or solid tumors. There were no pulmonary, cardiac, or neurologic signs typically associated with hypereosinophilic syndromes (HES). A renal biopsy is pending.

RESULTS

This case highlights the complexity of diagnosing eosinophilic disorders when typical criteria for HES (AEC >1500/mm³ + organ damage) are not fully met. The progressive renal impairment in the setting of persistent eosinophilia raises suspicion for a subclinical eosinophil-driven mechanism. The absence of systemic features often delays recognition of type 2 inflammatory diseases affecting non-traditional organs.

CONCLUSION

In patients with persistent eosinophilia and single-organ dysfunction, particularly renal, allergists should maintain a high index of suspicion for eosinophil-mediated disease. This case underscores

the importance of multidisciplinary collaboration and timely investigation to identify and manage atypical presentations of type 2 inflammation.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000053
Prefix: P29

COMPLEX DIAGNOSIS, CLEAR OUTCOME: SUCCESSFUL ANTI-IL-5R THERAPY IN OVERLAPPING EOSINOPHILIC DISEASE

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BACKGROUND

Eosinophilic and Th2-mediated inflammatory diseases present diagnostic and therapeutic challenges due to their overlapping features and diverse systemic manifestations. Advances in biologic therapies, particularly anti-IL-5 agents, have improved treatment efficacy and patient outcomes by targeting eosinophilic pathways.

METHOD

We report a diagnostically challenging case with a favorable response to anti-IL-5R therapy.

RESULTS

A 61-year-old male patient with atopic constitution, allergic rhinitis, asthma, and nasal polyposis, presenting with persistent dry cough and episodic choking recurring after corticosteroid withdrawal. Laboratory analyses consistently showed mild to moderate eosinophilia (with a single peak value of 1.7×10^9/L), elevated IgE (up to 10700 IU/mL), increased IgG (up to 27 g/L) and IgG4 (up to 11 g/L) alongside normal inflammatory markers and negative immunological laboratory tests. Pulmonary function tests demonstrated a progressive decline in the diffusing capacity of the lungs for carbon monoxide. Imaging revealed mediastinal lymphadenopathy and parenchymal lung changes, ground-glass opacities, reticulations, and perilymphatic nodules with a migratory pattern, suggesting eosinophilic granulomatosis with polyangiitis (EGPA) or sarcoidosis. Despite multiple bronchoscopies with bronchoalveolar lavage and transbronchial biopsies, no specific pathology was identified. Histopathology and immunohistochemistry of mediastinal lymph nodes revealed reactive lymphadenitis with sarcoid-like granulomas and findings suggestive of IgG4-related disease (IgG4-RD), without evidence of granulomatous or lymphoproliferative disease. Further hematological evaluation confirmed the absence of clonal or malignant hematologic disorders. The differential diagnosis included hypereosinophilic syndrome (HES), although the threshold eosinophil count $\geq1.5 \times 10^9$/L was recorded on a single occasion only,

limiting diagnostic certainty. Parasitic infection was excluded. Based on the clinical presentation and comprehensive multidisciplinary evaluation, the diagnosis of eosinophilic asthma with features suggestive of EGPA was considered most likely. Initiation of corticosteroids combined with anti-IL-5R biologic therapy (benralizumab) led to sustained clinical remission, eosinophil depletion, reduction in both total IgG and IgG4 levels, regression of lung lesions, and improved pulmonary function after one year. Nevertheless, IgE levels paradoxically increased (over 23000 IU/ml), warranting ongoing investigation.

CONCLUSION

This case highlights the diagnostic complexity of eosinophilic diseases with overlapping immunopathologies and underscores the efficacy of targeted anti-IL-5R therapy in achieving disease control. The persistent rise in IgE despite clinical remission remains unexplained and may reflect a rebound phenomenon, potential underlying IgG4-RD or clonal B-cell activation, necessitating further evaluation. Personalized, multidisciplinary approaches are essential in managing atypical eosinophilic disorders.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000038
Prefix: P30

PATTERNS OF ORGAN INVOLVEMENT AND ALLERGY BURDEN IN HYPEREOSINOPHILIC SYNDROME-INSIGHTS FROM A CENTRALIZED REFERENCE CENTRE

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BACKGROUND

Hypereosinophilic syndrome (HES) is a rare, heterogeneous disorder characterized by persistent eosinophilia and multi-organ involvement. Allergic comorbidities are frequently observed in HES, yet their prevalence and clinical significance remain underexplored. This study examines patterns of organ involvement and allergic diseases in a real-world cohort of HES patients treated in our tertiary referral centre

METHOD

We prospectively observed 72 patients diagnosed with hypereosinophilic syndrome (HES) to evaluate the frequency of organ involvement and allergic comorbidities within our cohort. Additionally, allergy workup, including specific IgE testing and skin prick tests was performed in all patients.

RESULTS

The most frequently affected organ systems were pulmonary (91.7%), sinus (75.0%), musculoskeletal (72.2%), and gastrointestinal (66.7%). Dermatological involvement was observed in 38.9% of cases, while neurologic and cardiac involvement were less common, affecting 13.9% and 8.3% of patients, respectively.

Concomitant allergic diseases were highly prevalent in this HES population. Asthma had been diagnosed in 83.3% of patients, while allergic rhinitis and chronic sinusitis were present in 44.4% and 55.6% of cases, respectively. Eczema was less frequently reported (13.9%).

CONCLUSION

HES organ involvement is extremely varied, and there is a strong overlap with allergic diseases, especially asthma and chronic rhinosinusitis. This profile underlines the need for multidisciplinary management of HES patients and highlights the potential interplay between hypereosinophilic inflammation and atopic disorders. Further research is warranted to explore the mechanistic links between organ involvement and allergic comorbidities in this rare disease.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000027
Prefix: P32

BURNED OUT EOSINOPHILIC ESOPHAGITIS: A NEW CONCEPT IN THE PROGRESSION OF UNTREATED EOSINOPHILIC ESOPHAGITIS

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*Presenting author: A. Mir

BACKGROUND

In our multidisciplinary eosinophilic esophagitis (EoE) clinic, we have observed older patients with advanced esophageal fibrosis and little to no eosinophils on esophageal biopsy. These patients typically have a long history of atopy and exhibit severe esophageal dysfunction. Features such as strictures, luminal narrowing, and loss of esophageal compliance reflect an advanced fibrotic stage. The absence of esophageal eosinophilic infiltration in an aging atopic population suggests that eosinophilic activity may decline over time in EoE. This highlights significant challenges in diagnosing and managing EoE in older individuals.

METHOD

We propose the term “Burned Out EoE” to describe an eosinophil-deplete late-stage fibrotic phenotype of EoE. We present a case series of patients to represent this term.

RESULTS

Case 1: An 88-year-old male with asthma presented with long-standing reflux symptoms and 5-year history of dysphagia with food impactions. Endoscopy showed diffusely very narrow-caliber esophagus with multiple areas of strictures, diffuse mucosal edema and exudates. Esophageal biopsies revealed neutrophilic and lymphocytic inflammation without eosinophils. ***Case 2*****:** A 65-year-old female without sensitization to known aeroallergens reported longstanding heartburn and a 4-year history of dysphagia with food impactions and localized perforation. Endoscopy revealed severe narrow caliber esophagus requiring pediatric endoscope and serial ballon dilations for strictures. Pathology showed <10 eosinophils/high power field. ***Case 3:*** A 55-year-old woman with allergic rhinitis and asthma presented with longstanding, recurrent food impactions and a recent esophageal perforation. Endoscopy showed esophageal rings and strictures requiring a pediatric endoscope. No eosinophils were identified on histopathology.

CONCLUSION

“Burned out EoE” typically manifests in older patients with longstanding, untreated EoE. We have observed that as fibrosis progresses, eosinophilic infiltration diminishes, and we hypothesize that this is not due to resolution of the underlying disease, but rather long-term tissue remodelling. The phenotype resembles tissue remodeling seen in inflammatory bowel disease or chronic asthma, offering long-term prognostic insight into this relatively novel condition. It underscores the importance of early recognition and treatment to prevent irreversible esophageal damage. Managing older patients with EoE is particularly challenging, as the typical histologic hallmark—eosinophilic inflammation—may be absent due to age-related changes in immune function or possible eosinophil senescence. In such patients, conventional anti-inflammatory therapies have limited utility and mechanical interventions such as esophageal dilation may be required.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000020
Prefix: P33

BIOLOGIC–AIT COMBINATION THERAPY AS A SUCCESSFUL TREATMENT FOR REFRACTORY EOSINOPHILIC ESOPHAGITIS IN A 12-YEAR-OLD BOY WITH ALLERGIC RHINITIS AND ASTHMA: A CASE REPORT

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BACKGROUND

Eosinophilic esophagitis (EoE) is a chronic, non-IgE-mediated disease driven by food and environmental antigens that stimulate type 2 immune response, leading to esophageal inflammation, remodeling, and motility dysfunction. While the association between EoE and allergic rhinitis (AR) is well established, the role of subcutaneous immunotherapy (SCIT) in the management of these patients remains unclear. The treatment landscape for allergic diseases has expanded with the introduction of biologic therapies that specifically target type 2 inflammatory pathways, reducing tissue inflammation. Allergen immunotherapy (AIT) is a disease-modifying treatment shown to reduce symptoms and the need for medication. Its main indications include patients whose symptoms are not fully controlled with topical or systemic corticosteroids and antihistamines. Combining biologics with AIT may broaden indications, enhance treatment safety, and improve efficacy in allergy management.

METHOD

We present the case of a 12-year-old boy with failure to thrive (weight: 24.4 kg, Z-score: -3.2; height: 131.3 cm, Z-score: -2.5) and EoE refractory to dietary modification, swallowed corticosteroids, and proton pump inhibitor (PPI) therapy. Due to the severity of his condition (Pediatric Eosinophilic Esophagitis Symptom Scores [PEESS® v2.0]: 45; histology: 70 eosinophils per high-power field [eos/hpf]), and seasonal exacerbations of esophagitis, allergic asthma, and rhinitis, treatment with SCIT (Spring Mix Trees) and dupilumab 200 mg subcutaneously every two weeks was initiated.

RESULTS

Six months into the treatment there was complete symptomatic (PEESS® v2.0: 0), endoscopic, and histologic remission (0 eos/hpf). Likewise, asthma and allergic rhinitis were well controlled during tree pollen season. No treatment-related adverse events were observed. The patient remained in clinical remission for more than three months following dietary expansion, including the introduction of new foods guided by component-resolved diagnostics (CRD).

CONCLUSION

We report symptomatic, endoscopic, and histologic remission of refractory pediatric EoE following combination therapy with dupilumab and SCIT in a 12-year-old boy. This case suggests that biologic–AIT combination therapy may be effective in selected EoE patients with comorbid allergic rhinitis and asthma. Importantly, SCIT did not exacerbate EoE in this case. Disease remission achieved with biologic therapy facilitated safe dietary expansion without recurrence of symptoms.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000060
Prefix: P35

SEVERE COW'S MILK ANAPHYLAXIS IN CHILDREN: A CASE SERIES SUPPORTING THE ROLE OF ALLERGEN AVOIDANCE AND BIOLOGIC THERAPY ASSESSMENT

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BACKGROUND

Cow's milk allergy (CMA) is one of the most common triggers of food-induced anaphylaxis in children. Although many children outgrow CMA, some remain highly reactive to minimal exposures, posing diagnostic and therapeutic challenges. This case series explores the clinical features, laboratory findings, and management strategies in children with persistent severe CMA.

METHOD

Three pediatric patients with confirmed IgE-mediated CMA and multiple anaphylactic episodes were evaluated. Clinical data, allergen sensitization, history of reactions to milk and other antigens, and treatment outcomes were reviewed.

RESULTS

Patient 1: A 5-year-old boy with immediate reactions since infancy, including anaphylaxis after chocolate, dairy-containing cake, and the MMR vaccine. Total IgE >2000 kU/L; milk-specific IgE class VI. Symptoms persist despite strict avoidance and inhaled corticosteroids for asthma.

Patient 2: A 13-year-old boy with anaphylactic shock to milk at 6 months and reactions to egg, chocolate, and quail milk. ImmunoCAP showed high reactivity to milk and egg components (>100 kU/L). Recent accidental exposures required intramuscular adrenaline and corticosteroids.

Patient 3: A 5-year-old boy with multiple food allergies, asthma, and atopic dermatitis. He experienced anaphylaxis to the MMR vaccine and "tres leches" cake. Sensitization confirmed to milk and egg. After implementing a strict elimination diet and gradual reintroduction of some tolerated foods, his clinical status improved, though asthma relapses still occur.

CONCLUSION

These cases highlight persistent and severe CMA with systemic reactions to trace exposures and coexisting atopic disease. All patients benefited from strict allergen avoidance and emergency education. Biologic therapy is under consideration for selected patients to reduce the risk and disease burden.

EsSalud
Hospital Nacional
Eduardo Rebagliati Martins

Reporte de Resultados
Hospital Nacional Edgardo Rebagliati Martins

Nº solicitud: 3434650 **Paciente:** TENORIO SALVATIERRA DANIEL SEBASTIA **Doctor:** Dra. Alva
Documento: 62812890 **Fecha de Nacimiento:** 09/04/2011 **Sexo:** M **Servicio:** Alergias

ALIMENTOS

Código	Examen	Resultado	U. de medida	Interpretación
f1	Clara de Huevo	>100	kUA/l	POSITIVO
f2	Leche	>100	kUA/l	POSITIVO
f24	Camaron	5.29	kUA/l	POSITIVO
f25	Tomate	0.67	kUA/l	POSITIVO
f26	Cerdo	1.12	kUA/l	POSITIVO
f3	Pescado	0.16	kUA/l	POSITIVO
f33	Naranja	0.37	kUA/l	POSITIVO
f44	Fresa	0.55	kUA/l	POSITIVO
f75	Yema de Huevo	>100	kUA/l	POSITIVO

PROTEINAS

Código	Examen	Resultado	U. de medida	Interpretación
f232	Ovoalbumina	>100	kUA/l	POSITIVO
f233	Ovomucoide	>100	kUA/l	POSITIVO
f323	Conalbumina o Gald3	>100	kUA/l	POSITIVO
f76	Alfa-Lactoalbumina	>100	kUA/l	POSITIVO
f77	Beta-Lactoglobulina	>100	kUA/l	POSITIVO
f78	Caseina	>100	kUA/l	POSITIVO
k208	Lisozima o Gald4	22.6	kUA/l	POSITIVO

Dra. Maria Cristina Mattos Pucahuaranga
CMP. 34567 RNE. 30996
MEDICO PATÓLOGO CLINICO

Grado de sensibilización (correlación clínica)	
0.10 - 0.70 kUA/L	Bajo
0.70 - 3.50 kUA/L	Moderado
> 3.50 kUA/L	Alto

Metodología: INMUNOCAP
Fecha de registro: 12/09/2024
Procesado por: Blg. Isabel Gutierrez P.

EsSalud
Hospital Nacional
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Reporte de Resultados
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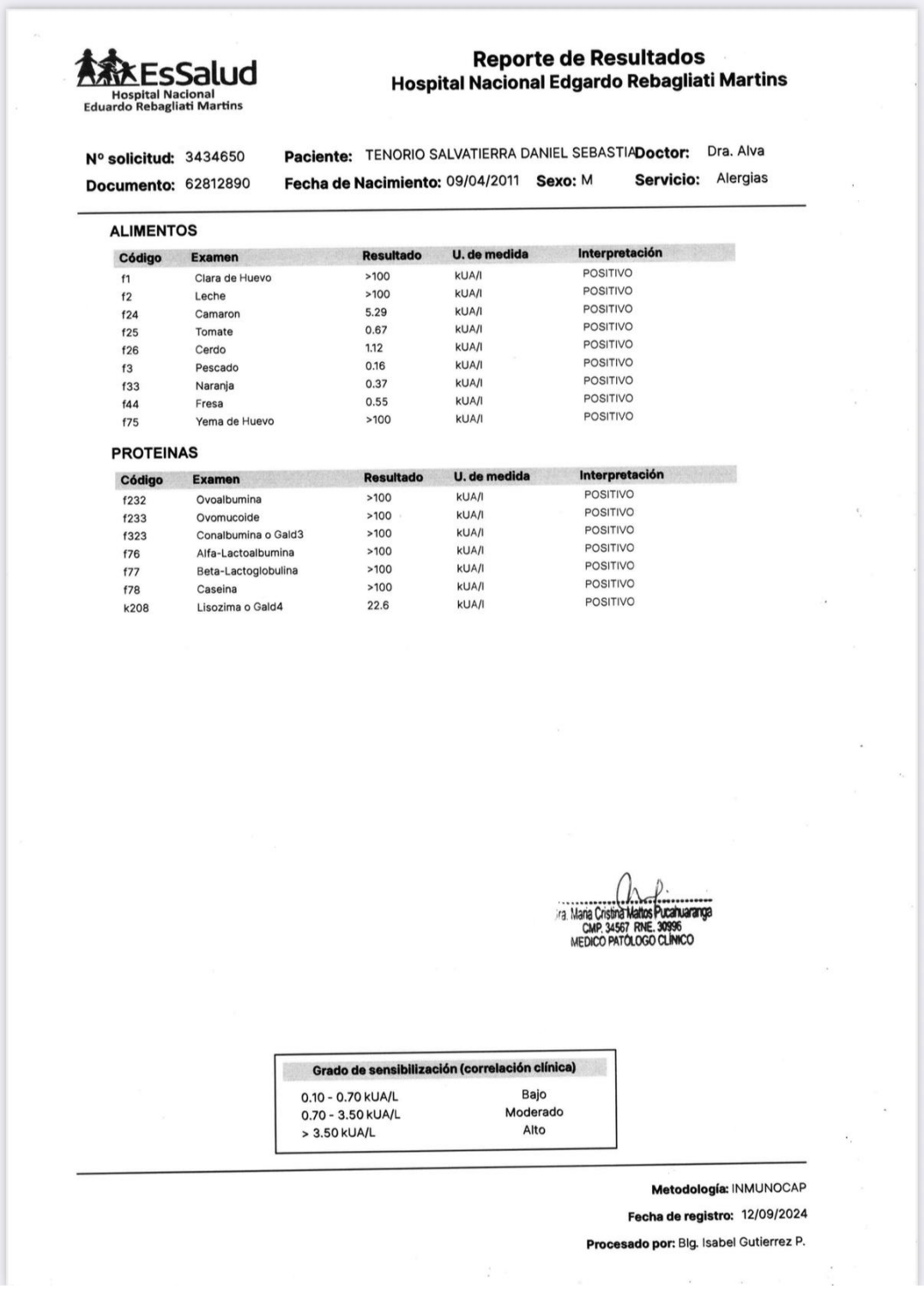
Metodología: INMUNOCAP
Fecha de registro: 12/09/2024
Procesado por: Blg. Isabel Gutierrez P.



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Reporte de Resultados
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Nº solicitud: 3434650 **Paciente:** TENORIO SALVATIERRA DANIEL SEBASTIA **Doctor:** Dra. Alva
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Dra. Maria Cristina Mattos Pucahuaranga
CMP. 34567 RNE. 30996
MEDICO PATÓLOGO CLINICO

Grado de sensibilización (correlación clínica)	
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0.70 - 3.50 kUA/L	Moderado
> 3.50 kUA/L	Alto

Metodología: INMUNOCAP
Fecha de registro: 12/09/2024
Procesado por: Blg. Isabel Gutierrez P.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000079
Prefix: P36

EDIBLE INSECTS:CRICK OR TREAT?

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BACKGROUND

Edible insects, rich in protein and essential nutrients, are emerging as a possible solution to address global food security concerns. Unlike traditional livestock, they require fewer resources such as water and land, making them a sustainable and promising food source for the future. However, in Europe, insects are considered “novel foods” due to their limited historical consumption within the European Union. Despite their many benefits, insect consumption does present some risks. Studies report cases of adverse reactions, including anaphylaxis, triggered by the ingestion of insects. Given the growing interest in insect-based diets, it is essential to understand the prevalence and nature of such reactions.

METHOD

Twenty-eight-year-old patient with a history of mild perennial oculorhinitis due to allergic sensitization to dust mites diagnosed during an ENT examination following a skin prick test in 2023.

In February 2025, approximately thirty minutes after consuming a meal with shrimps, the patient experienced gastric congestion, widespread itching, dysesthesia in the ears, and a rash on the face, which was in remission at Sant'Andrea Hospital in Rome, where the patient was admitted with an orange code due to severe arterial hypotension. The patient had consumed shrimp up to that point without adverse reactions.

RESULTS

In March 2025, half an hour after consuming a cracker containing cricket flour among its ingredients, the same symptoms that occurred in February 2025 appeared, remitting with intramuscular steroid therapy.

The ImmunoCAP ISAC test on 03/22/2025 showed sensitization only to Cup at 1; spirometry

was normal and the bronchodilation test was negative.

Specific IgE tests carried out on 6/05/2025 show clear positivity towards Dermatophagoides

Pteronissus, Dermatophagoides Farinae, Shrimp, Crab with negativity of Pen at 1 and serum tryptase within the normal range.

CONCLUSION

Upon arrival at the allergology clinic at the U.O.S.D. (Simple Departmental Operating Unit)of the A. Gemelli Polyclinic in Rome, a prick by prick test was performed on 17/06/2025 with flour from the same manufacturer as the cracker in question, with a clear positive result immediately after twenty minutes.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

TOPIC 3: SKIN DISORDERS

Submission number: 000032
Prefix: P37

TRANSCRIPTOMIC INSIGHTS INTO DUPILUMAB RESPONSE IN NETHERTON SYNDROME WITH DUAL SPINK5 AND FLG MUTATIONS

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*Presenting author: C. Bajo Santos

BACKGROUND

Netherton syndrome (NS) is a rare autosomal recessive disorder characterized by skin barrier dysfunction and severe atopic manifestations, primarily caused by mutations in SPINK5. To the best of our knowledge, no studies have investigated the molecular effects of dupilumab therapy in NS patients, particularly those carrying dual heterozygous mutations in SPINK5 and FLG, two genes central to skin barrier integrity. Our objective was to characterize transcriptomic changes associated with dupilumab treatment in a family with NS harboring heterozygous variants in both SPINK5 and FLG and to explore potential variability in treatment response across additional NS cases with similar SPINK5 mutations.

METHOD

Transcriptomic profiling was conducted on peripheral blood and skin biopsy samples obtained before and after dupilumab treatment. Differential gene expression and pathway enrichment analyses were used to identify immune- and barrier-related changes. To evaluate molecular similarities at the tissue level, additional transcriptomic datasets from NS samples carrying the same SPINK5 mutation were analyzed, enabling assessment of shared transcriptional signatures across individuals.

RESULTS

Transcriptomic analysis identified more than 18,000 differentially expressed genes in blood samples, of which 13 were significantly upregulated following dupilumab treatment. These changes were associated with normalization of immune signatures and modulation of NF-κB signaling toward a profile resembling healthy controls. In the skin, transcriptomic changes revealed attenuation of keratinocyte-driven inflammation and restoration of lipid metabolism pathways

commonly disrupted in NS. Comparative analysis with additional NS tissue cases revealed overlapping patterns of transcript overexpression.

CONCLUSION

This is the first transcriptomic report of dupilumab response in NS with dual SPINK5 and FLG mutations. Findings demonstrate the therapy's potential to partially restore immune balance and barrier function at the molecular level. Results support the role of individualized molecular profiling to optimize biologic therapy in rare genorermatoses.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000084
Prefix: P38

EVALUATING ANTIHISTAMINE DISCONTINUATION IN PATIENTS RECEIVING OMALIZUMAB FOR CHRONIC SPONTANEOUS URTICARIA: A STUDY OF THE BIOBADALER CONSORTIUM

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*Presenting author: P.L. Quan

BACKGROUND

Most clinical trials assessing the efficacy of biological treatments for chronic urticaria do so while patients maintain continued antihistamine therapy. As a result, current guidelines recommend biologics primarily as add-on therapies, rather than stand-alone alternatives. This exploratory study aims to examine the clinical trajectory of patients who successfully discontinued antihistamines while receiving Omalizumab for severe chronic spontaneous urticaria.

METHOD

BIOBADALER is a comprehensive registry of patients undergoing therapy with biologicals, incorporating clinical and follow-up data collected at 8 centres in Spain. We selected 25 patients diagnosed with severe chronic spontaneous urticaria, enrolled as part of the BIOBADALER project, who were followed from 2018 to 2022. Response to treatment with Omalizumab was monitored using UAS7 or UCT scores. Data on the dosage, frequency, and discontinuation of concomitant antihistamine use were systematically recorded.

RESULTS

The median age at diagnosis was 45.5 years, and 76% of the cohort were female. By the first follow-up visit, 18 of 25 (72%) of patients had discontinued antihistamine use. Antihistamines were discontinued within the first 6 months of Omalizumab treatment in 11 patients, and within 9 months in 14 patients. Of the 7 patients who had not discontinued at the first follow-up visit, 3 were able to suspend them by the last visit. Another was able to reduce frequency of use over the course of treatment with Omalizumab. The most frequently prescribed antihistamine was bilastine, used by 16/25 (64%) patients, followed by ebastine (4/25, 16%), cetirizine (3/25, 12%) and rupatadine (2/25, 8%). Only one patient used a first-generation antihistamine (hydroxicine), while only two patients used a combination of antihistamines (bilastine and ebastine).

CONCLUSION

In this exploratory study, a subset of patients initiated on biologics were able to taper off antihistamines over the course of treatment. Studies evaluating the efficacy of Omalizumab and other biologics may consider incorporating antihistamine therapy on an as-needed basis, rather than as continued treatment for all patients. This approach may offer a more comprehensive understanding of the disease-modifying potential of biological treatments and identify patient groups where these can be used as stand-alone therapies.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000076
Prefix: P39

TH-2 MONOCLONALS AND JAK-INHIBITORS TO TREAT IEI WITH ALLERGIC DYSREGULATION: THE ATO-PID PROJECT

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*Presenting author: G. Sardella

BACKGROUND

Although IEI is typically associated with a tendency to recurrent and/or severe infections, patients often suffer from other manifestations, including severe atopic dysregulation. Anti-TH2 biologics and JAK-inhibitors (JAK-i), effective in immunocompetent individuals, are potential therapies, but data on their use in IEI are scarce. This systematic review and meta analysis assessed their efficacy and safety in patients with IEI.

METHOD

A systematic review of international medical databases on the use of anti-TH2 biologics and JAK-i in IEI with atopic manifestations was conducted in May 2025.

RESULTS

We identified 99 papers and 139 patients (48% female, 54% <18 years). We identified 149 treatment courses including anti-IL4/R (n=92), anti-IgE (n=26), JAK-i (n=27), and anti-IL5/R (n=4). The most frequent diagnoses were Netherton syndrome and STAT3-LOF. Treatment was indicated primarily for dermatological manifestations (75%) followed by respiratory (9%) and gastrointestinal manifestations (5%), or a combination of these manifestations (11%). Six patients were treated to improve their HSCT outcome as they received dupilumab or JAK-i as for GVHD or as bridging therapy, with a positive outcome in five of them. Hyper-IgE syndromes, disorders of the epithelial barrier, and primary antibody deficiencies were mainly treated with anti-IL4R, anti-IgE, and anti-IL-5/IL-5R, whereas disorders of the JAK/STAT pathway were mainly treated with JAK-i. Treatment was effective in 97%. 11 patients switched to other monoclonals/Jak-i due to failure or incomplete control of symptoms (10 patients) or insurance coverage. Among 10 patients with failure or incomplete efficacy, eight improved upon switching to another drug and one reached a better control with the addition of a second biologic. One patient did not improve. Adverse events (AEs) occurred in 15%, mostly mild/moderate without treatment discontinuation. JAK-i were associated with the highest frequency of AEs, including two severe AEs and 3 fatal outcomes (2 caused by infective complications and 1 due to pulmonary progression of cGVHD).

CONCLUSION

Available data suggest anti-TH2 biologics and JAK-i are highly effective for atopic dysregulation in IEI. Nevertheless the safety profile requires careful individual assessment, especially for JAK-i, weighing benefits against the setting of the specific underlying immune defect. Larger, prospective studies are crucial to establish definitive conclusions.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000090
Prefix: P40

IMPACT OF SELECTED ADVERSE EFFECTS ON THE EFFECTIVENESS OF SEVERE ATOPIC DERMATITIS TREATMENT – PROSPECTIVE ANALYSIS

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*Presenting author: U. Jedynak-Wąsowicz

BACKGROUND

Biologic treatment based on dupilumab is a highly effective method for managing severe atopic dermatitis (AD). However, it is associated with potential adverse effects. The most common include moderate eosinophilia, recurrent herpes simplex infections, and conjunctivitis. The aim of this analysis was to assess whether the occurrence of these adverse events affects treatment outcomes, measured using EASI, cDLQI, and IGA scores.

METHOD

A total of 26 patients with AD (boys: 15) undergoing systemic treatment were included in the analysis. The mean age of the patients was 12.2 years (SD = 3.4), with a range of 6 to 17 years.

Patients were assessed at three time points: baseline, after 3 months, and after 6 months of treatment. Adverse events were reported as follows: Herpes simplex infection: 8 patients (30%); moderate eosinophilia: 9 patients (34,6%); conjunctivitis: 4 patients (15,4%). Changes in EASI, cDLQI, and IGA were analyzed depending on the presence of adverse events using t-tests and longitudinal comparisons.

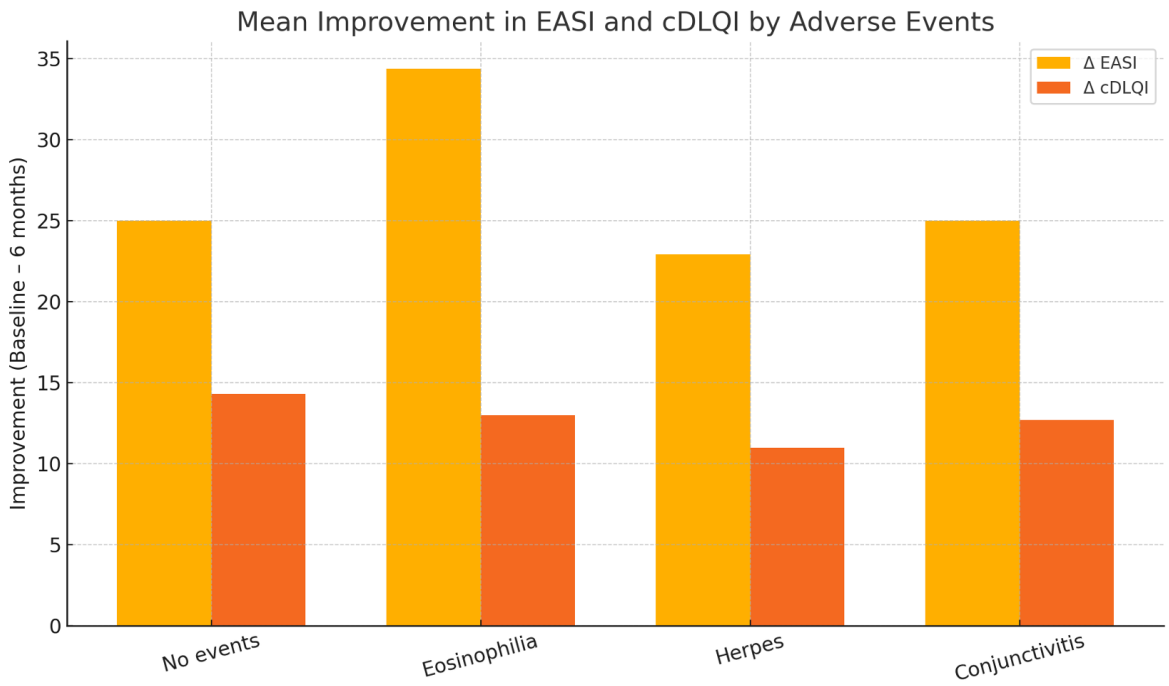
RESULTS

Moderate eosinophilia was associated with significantly better cDLQI improvement at 3 months ($p = 0.001$), indicating enhanced quality of life. Herpes simplex infection was associated with higher EASI scores at 6 months ($p = 0.008$), suggesting reduced skin control in this group. Conjunctivitis did not significantly affect treatment response – EASI, cDLQI, and IGA values were similar across groups ($p > 0.3$). The greatest average improvements were observed in patients with eosinophilia (−34.4 EASI points) and those without herpes (−14.3 cDLQI points).

Figure 1 presents the mean improvement (delta) in EASI and cDLQI scores from the initiation of therapy to month 6, stratified by the presence of adverse events.

CONCLUSION

Although side effects were relatively rare, they may have clinical significanceas. Moderate eosinophilia may serve as a biomarker of favorable treatment response. Recurrent herpes simplex infection may be associated with a suboptimal therapeutic outcome.



EASI: Eczema Area and Severity Index; cDLQI: children's Dermatology Life Quality Index

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000028
Prefix: P43

ACCESS BARRIERS TO BIOLOGIC THERAPIES FOR IMMUNE-MEDIATED DISEASES IN ALBANIA: A SITUATIONAL ANALYSIS

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BACKGROUND

Biologic therapies have revolutionized the treatment of chronic immune-mediated diseases such as asthma, atopic dermatitis, and autoimmune disorders. However, access remains highly unequal across Europe. Albania, a lower-middle-income country, faces unique challenges in integrating biologics into routine clinical care.

METHOD

A qualitative analysis was conducted through a review of national healthcare policy documents, Health Insurance Fund (FSDKSH) drug reimbursement lists, and regional pricing data. Semi-

structured interviews were performed with local specialists (n=8), pharmacists (n=3), and healthcare policymakers (n=2) to explore real-world prescribing practices and patient access experiences.

RESULTS

Biologics for dermatologic, allergic, and rheumatologic diseases are largely unavailable or unaffordable in the public sector. Key access barriers identified include: Absence of reimbursement for most EMA-approved biologics (e.g., omalizumab, dupilumab, adalimumab). High out-of-pocket costs, exceeding €700/month per patient. Limited specialist training in biologics prescribing, especially outside the capital.Regulatory delays in biologic and biosimilar approval. Lack of national guidelines or patient registries to guide biologic use. Physicians frequently resort to systemic corticosteroids or immunosuppressants, with increased long-term toxicity.

CONCLUSION

Despite clear clinical indications and established efficacy, access to biologic therapies in Albania remains restricted by structural and financial limitations. Policy reform, biosimilar adoption, and regional partnerships are urgently needed to reduce treatment inequity and align Albania with European standards of care.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000074
Prefix: P44

BIOLOGICAL INDUCED CONJUNCTIVITIS IN ATOPIC DERMATITIS IS ASSOCIATED WITH DECREASED INFLAMMATORY MEDIATORS IN TEARS: A STUDY OF THE BIOBADALER CONSORTIUM

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BACKGROUND

Dupilumab-DUP and Tralokinumab-TRA are effective in atopic dermatitis(AD) andDUP also in severe asthma(SA). However, both drugs can induce conjuncitivitis in AD patientsonly. This side effect presents as a form of evaporative dry eye. In this study, we evaluate theimpact of different treatments(DUP, TRA, Cyclosporin A-CysA and JAK inhibitors-JAKi) for ADon the ocular surface .

METHOD

20,10,10,10,10,10 patients were included in the AD-DUP, AD-TRA, AD-CysA, AD-JAKi,AD-MM(mild-moderate) and SA-DUP groups, respectively. Ophthalmological signs andsymptoms were assessed through OSDI, and tear and conjunctival impression cytology(CIC)samples were collected from individuals who had received > 3 months treatment. Tears wereused for proteomic Olink® analysis and CIC was subjected to qPCR.

RESULTS

OSDI showed MM affection in 10% of AD-DUP and AD-TRA individuals, whereas it wasnormal in the other groups. Ophthalmological examination was altered in 71% and 33% of AD-DUP and AD-TRA subjects respectively, with conjunctival scarring, blepharitis, and keratitisbeing indicative of biological-associated-conjunctivitis(BAC). The other groups displayed anormal examination. Inflammatory mediators related to T-cell activation, angiogenesis andfibrosis were generally decreased in tear samples from AD-DUP and AD-TRA as compared withthe other groups, especially in patients with BAC. Conversely, CXCL5 was increased in tears ofAD patients with BAC(p<0.01). No significant differences were observed in the mRNAexpression of tight junction proteins among any groups.

CONCLUSION

The proportion of patients with conjunctival abnormalities in the ophthalmologicalexamination is higher than that of individuals reporting ocular surface symptoms. The dry eyeinduced by biologicals in AD patients might account for a decrease in hematopoietic cellsinfiltrating the conjunctiva and the subsequent scarcity of their soluble mediators. Conversely,chemokines derived from stromal cells undergoing necrosis might

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000085
Prefix: P45

BENRALIZUMAB IN STEROID-REFRACTORY DRESS - A SINGLE CENTER CASE SERIES

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BACKGROUND

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) is a potentially life-threatening delayed hypersensitivity reaction.

Systemic steroids represent first-line therapy, but further treatments are required in steroid-refractory cases. Traditional immunosuppressants have shown to be effective, however, they carry a significant infectious risk which may contraindicate their use during severe infections.

Benralizumab is a humanized mAb able to deplete eosinophils in blood and tissues by targeting IL-5Rα.

We describe our experience using benralizumab in 4 cases of steroid refractory DRESS.

METHOD

We retrospectively reviewed the medical records of patients with steroid-refractory DRESS treated at our Allergology Department.

DRESS was diagnosed in patients with new onset generalized skin eruption, fever and elevation of blood eosinophilic count (BEC) with or without evidence of internal organ involvement after exclusion of other possible etiologies.

At the time of data collection, RegiSCAR score ≥5 was used as a validation tool to confirm the definitive diagnosis.

RESULTS

In our series, all patients were females (71, 83, 27, 65 y/o). An antibiotic was identified as the culprit drug (ceftriaxone in P1, P2, P4; meropenem in P3) with a mean time to onset of 16 days. Fever (≥38.5°C) was present in all cases.

P1 was hospitalized for septic meningitis and presented with facial swelling, erythroderma, and hypereosinophilia (8600/mm3; 58.3% were CD62Llow inflammatory eosinophils (iEos)).

P2 was already taking steroids for COPD exacerbation. She presented a diffuse maculopapular rash and mild pancytopenia with eosinophilia (1930/mm3, 4.3% iEos).

P3 showed erythroderma and hypereosinophilia (2400/mm3, 20.5% iEos) during her stay in ICU for cardiogenic shock and intravascular device infection. She had both mild cytotoxic and cholestatic liver involvement (ALT 2x ULN, total bilirubin 1.7 mg/dl).

P4 was admitted for urosepsis. She developed severe exfoliating erythroderma and hypereosinophilia (2300/mm3).

All 4 cases showed no cutaneous response and persistent eosinophilia after 3 days of high dose IV steroids. A single dose of benralizumab 30 mg SC was administered. BEC abated within 48 hours along with rapid cutaneous improvement. None of our patients relapsed and no adverse reactions were reported.

CONCLUSION

Benralizumab is a safe and effective treatment for steroid-refractory DRESS. We believe it may represent a first-choice strategy especially in patients with elevated infectious risk.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000037
Prefix: P48

DRUG REACTION WITH EOSINOPHILIA AND SYSTEMIC SYMPTOMS (DRESS) SYNDROME SECONDARY TO AMOXICILLIN WITH CLAVULANIC ACID: A CASE REPORT

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BACKGROUND

A severe adverse drug reaction with heterogeneous clinical manifestations is known as a drug reaction with eosinophilia and systemic symptoms (DRESS). Most patients present with an extensive skin rash associated with visceral involvement, lymphadenopathy, eosinophilia, and atypical lymphocytosis. Usually, two to eight weeks pass between starting a medication and the onset of the illness.

METHOD

In addition to the data gathered for the clinical evaluation, a literature study was conducted in the PubMed database to obtain the most recent data on DRESS syndrome that had been published to summarize this case report.

RESULTS

A 69-year-old man with no significant past medical history was treated with amoxicillin with clavulanic acid for a left finger injury sustained while cleaning a fish. He had no known drug allergies. On the third day of treatment, he developed a diffuse, pruritic rash on his trunk. Discontinuation of antibiotic treatment resulted in partial resolution of the rash. Since then, he has had daily sub-febrile temperatures and a malaise. He was admitted to our Department three weeks later with a daily fever of 38.5°C lasting 3 days before admission, a dry cough, and an intensely erythematous maculopapular rash. The skin lesions were symmetrically distributed over the trunk and extremities, affecting more than 50 percent of the body surface area. Laboratory analysis revealed significant eosinophilia (10.14 $x10^9$/L), leukocytosis, and lymphocytopenia. The hepatocellular pattern of liver injury was prominent, with liver enzymes elevated more than ten times the upper limit of normal. Computed tomography of the chest verified interstitial infiltrates with bilateral pleural effusions. Endoscopic evaluation of the digestive system revealed erosive hemorrhagic gastritis, accompanied by a significant drop in the red blood count. Other possible causes of hypereosinophilia were investigated and ruled out, as well as underlying systemic autoimmune, infectious, and malignant diseases. The diagnosis of definite DRESS syndrome was established based on the Registry of Severe Cutaneous Adverse Reactions (RegiSCAR) scoring

system. Treatment with high doses of prednisone (1 mg/kg) was initiated, along with supportive care, which resulted in the gradual withdrawal of symptoms and normalization of laboratory findings.

CONCLUSION

In cases induced by antibiotics, particularly beta-lactams, the latency period from the beginning of treatment to the development of DRESS syndrome may be shorter, and diagnosis can easily be missed. Because of its evolving clinical picture and potentially fatal manifestations, it is important to assess the diagnosis of DRESS syndrome, even in instances with a short latency period.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000022
Prefix: P49

ALLERGIC COMORBIDITIES IN CHILDREN WITH CHRONIC URTICARIA

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BACKGROUND

Allergic comorbidities have been commonly reported in children with chronic urticaria. The main objective of the study was to identify the Type-2-related atopic conditions in a pediatric population as a surrogate marker of the endotype of the disease.

METHOD

We retrospectively analysed data of children with chronic urticaria examined in a tertiary Allergy Center in Greece, from 2021-2024. Recorded parameters were demographics, allergic comorbidities and sensitisation to aeroallergens or food allergens. Skin prick tests and specific IgE tests were performed on the patients who reported symptoms of atopic diseases. The sensitisation was defined as a positive skin prick test with a wheal diameter ≥3mm or allergen- specific IgE ≥0.35 KU/L.

RESULTS

84 children were included, 45 males (54%) mean-aged 9,6 ± 4,2 years. 52 children were diagnosed with chronic spontaneous urticaria (62%) and 32 with induced urticaria, out of which 18 children had cold urticaria, 10 symptomatic dermographism and 4 cholinergic urticaria. 24 out of 84 children (28,6 %) had a history of allergic disease either at the time of the urticaria diagnosis or in a younger

age. Allergen testing was performed on children who reported symptoms of atopic diseases. In specific, 13 children had atopic dermatitis (15,5%), 15 allergic rhinitis (17,9%), 3 allergic asthma (3,6%) and 2 food allergy (2,4%). 15 children were sensitised to aeroallergens (17,9%). Among this population, the percentages of children sensitised to mites were 27% (n=4), to tree pollen 67% (n=10), to parietaria/grasses 53% (n=8), to molds 33% (n=5) and to cat/dog epithelia 47% (n=7).

CONCLUSION

The study suggests that the prevalence of allergic comorbidities in children with chronic urticaria is not apparently different from that of the general pediatric population. Nevertheless, Type 2-related allergic comorbidities are common in this group, and therefore require attention.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000064
Prefix: P50

EXACERBATED MASTOIDITIS WITH AUTOIMMUNE INFLAMMATION UNDER OCRELIZUMAB TREATMENT

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BACKGROUND

A 32-year-old patient, with Multiple Sclerosis in remission on treatment with half-annual dosing of ocrelizumab, presented with otalgia, auricular pressure sensation, hearing impairment, otorrhea and impaired facial nerve function on the left side. They were transferred to tertiary hospital with amoxicillin-clavulanic-acid-therapy resistant, spontaneously perforated otitis media with involvement of the inner ear. The first symptoms had been documented four weeks prior.

METHOD

Upon admission they were treated with piperacillin–tazobactam. CT imaging revealed opacification of mastoid cells with osteolysis and corresponding cutaneous defects in the mastoid region. A tympanic drainage and mastoidectomy was performed under general anesthesia. Local daily debridement and revision surgery including partial facial nerve decompression did not improve their condition significantly. While all microbiological swabs and serology remained negative, we addressed potential intracellular pathogens and added moxifloxacine and doxycycline. The treatment had only little positive effect on the inflammatory parameters. Later on, a surgical revision of the wound with the removal of a newly developed fistula was performed. The insufficient response to therapy led to the diagnosis of retroauricular impaired wound healing, status post otitis media with involvement of the inner ear and mastoiditis. Because the extensive

microbial analysis of the samples was repeatedly negative for bacteria and fungi, oral prednisolone (20 mg, 1-0-1) was started.

RESULTS

As a result, inflammatory parameters decreased, and local erythema resolved and effective skin closure was achieved. The patient was subsequently managed on an outpatient basis.

CONCLUSION

This case suggests that during the treatment with ocrelizumab autoimmune inflammatory responses may exacerbate initial infections and need to be addressed proactively.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000046
Prefix: P51

A VERSATILE MONOCLONAL ANTIBODY: THREE CASE REPORTS OF UNCOMMON USE AND EFFICACY OF DUPILUMAB

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BACKGROUND

Dupilumab is a monoclonal antibody targeting the IL-4/IL-13 receptor, approved in Italy for the treatment of moderate-to-severe atopic dermatitis, severe asthma with type 2 inflammation, chronic rhinosinusitis with nasal polyposis, and eosinophilic esophagitis. We report three cases of uncommon use and efficacy of Dupilumab.

METHOD

The first case we report is a 50-year-old male with IgG4-related retroperitoneal fibrosis and post-renal acute kidney injury, unresponsive to multiple immunosuppressive therapies, including glucocorticoids, methotrexate, mycophenolate mofetil, and rituximab. Off-label initiation of Dupilumab 300 mg biweekly in June 2023 led to progressive clinical and radiological improvement, allowing removal of nephrostomies by February 2024 and discontinuation of immunosuppressants by November 2024. Follow-up imaging showed complete resolution of retroperitoneal involvement, supporting Dupilumab as a potential therapeutic option in refractory IgG4-related disease and steroid-sparing.

The second case we report is a 71-year-old male with multiple comorbidities, including chronic renal failure, who developed severe and persistent pruritus following treatment for scabies in April 2024. Laboratory evaluation showed fluctuating eosinophilia. In April 2025, based on clinical presentation and emerging evidence on post-scabies prurigo, off-label treatment with Dupilumab was initiated. At the two-month follow-up, the patient reported complete resolution of pruritus.

The third case we report is a 71-year-old male, former heavy smoker with long-standing HIV infection presented with progressively worsening dyspnea at rest. Pulmonary function tests revealed severe obstructive ventilatory impairment with marked air trapping and reduced diffusing capacity. Despite treatment with ICS-LABA, clinical benefit was limited. Chest CT confirmed diffuse panlobular emphysema. In April 2025, off-label Dupilumab 300 mg was initiated due to suspected type 2 inflammation. After one month, the patient reported significant symptomatic improvement (ACT 20, CAT 8).

RESULTS

Favorable clinical outcomes in these cases of refractory IgG4-related disease, persistent post-scabetic pruritus and eosinophilic COPD, was observed.

CONCLUSION

In conclusion, these cases show the relevance of IL-4/IL-13 pathway inhibition in a broader spectrum of immunoinflammatory conditions. Additional studies are necessary to confirm its effectiveness and safety in off-label use.

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000081
Prefix: P52

ALLOPURINOL-INDUCED DRESS COMPLICATED BY VBDS: A CASE REPORT

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BACKGROUND

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) is a severe cutaneous adverse reaction (SCAR) characterized by high-grade fever, facial edema, generalized lymphadenopathy, and a widespread morbilliform rash, often accompanied by systemic organ involvement. Visceral manifestations frequently affect the liver, kidneys, lungs, heart, and endocrine system (1). Various medications have been identified as triggers for DRESS, including

anticonvulsants , sulfonamides, NSAIDs , beta-lactam antibiotics, vancomycin, allopurinol, minocycline, and several antiretroviral agents (2) .

METHOD

Case Presentation:A 61-year-old woman with a medical history of focal segmental glomerulosclerosis, chronic kidney disease, hypertension, obesity, and pulmonary disease presented with a two-day history of high-grade fever, diffuse maculopapular rash, abdominal pain, and diarrhea. She had recivied allopurinol therapy six weeks prior, discontinued one week before symptom onset. Laboratory investigations revealed leukocytosis with eosinophilia, lymphopenia, elevated inflammatory markers, and a mixed hepatocellular-cholestatic liver injury pattern. Infectious and septic evaluations were negative, and imaging excluded biliary obstruction. Skin biopsy demonstrated interface dermatitis consistent with a drug reaction. With a RegiSCAR score of 3, DRESS syndrome was diagnosed. Systemic corticosteroids (prednisolone 1 mg/kg/day) were initiated, resulting in improvement of rash, eosinophilia, and transaminases by day 7; however, cholestatic markers worsened by day 14 (Table 1). Liver biopsy revealed granulomatous hepatitis with ductopenia, confirming vanishing bile duct syndrome (VBDS). The patient was referred to a tertiary hepatology center.

RESULTS

Discussion: Hepatic involvement is common in DRESS, with injury severity ranging from mild enzyme elevations to fulminant hepatic failure. Allopurinol is a frequent cause of liver injury in DRESS and is associated with poorer outcomes. Liver injury may present with cholestatic, hepatocellular, or mixed biochemical patterns; cholestatic injury is more frequent in older patients and linked to prolonged illness (4,5). VBDS is a rare but serious complication of drug-induced liver injury, including DRESS, characterized by progressive loss of intrahepatic bile ducts and persistent cholestasis, likely mediated by T-cell immune responses (6). Few cases describe DRESS progressing to VBDS following carbamazepine, zonisamide, and ethosuximide exposure (7–9).Management involves drug withdrawal, corticosteroids, ursodeoxycholic acid, and care at liver transplant specialized centers (10).

CONCLUSION

DRESS can cause severe hepatic complications,including VBDS. Persistent cholestasis despite treatment, especially with high-risk drugs like allopurinol, should raise suspicion for VBDS.

Table 1. Eosinophil Count and Liver Profile Over 2 Weeks

Parameter	Reference Range	Day 1	Day 7	Day 14
Eosinophils (×10⁹/L)	0.0 – 0.7	1.6	0.7	1.3
ALT (U/L)	0 – 40	282	478	278
AST (U/L)	0 – 40	120	175	95
ALP (U/L)	30 – 120	355	828	920
GGT (U/L)	5 – 55	246	854	1247
Total Bilirubin (µmol/L)	3 – 21	22	114	350
Direct Bilirubin (µmol/L)	0 – 5	22	119	347
Albumin (g/L)	35 – 50	32	30	31

table 1 . eosinophil count and liver profile over 2 week

CONFLICTS OF INTEREST

The authors did not specify any links of interest.

Submission number: 000056
Prefix: P53

CASE REPORT: STEROID RESISTANT BULLOUS PEMPHIGOID AND HYPER-EOSINOPHILIC SYNDROME: NEW THERAPEUTIC APPROACHES AND THERAPEUTIC CHALLENGES

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BACKGROUND

Bullous pemphigoid (BP) is a chronic autoimmune disorder characterized by the formation of bullae mediated by autoantibodies targeting the BP180 and BP230 antigens. Among the mediators, IgE and eosinophils are important cofactors of the disease. Hyper-eosinophilic syndrome is characterized by persistent and marked hyper-eosinophilia (HE) with the involvement of multiple organs in the absence of secondary causes of eosinophilia.

METHOD

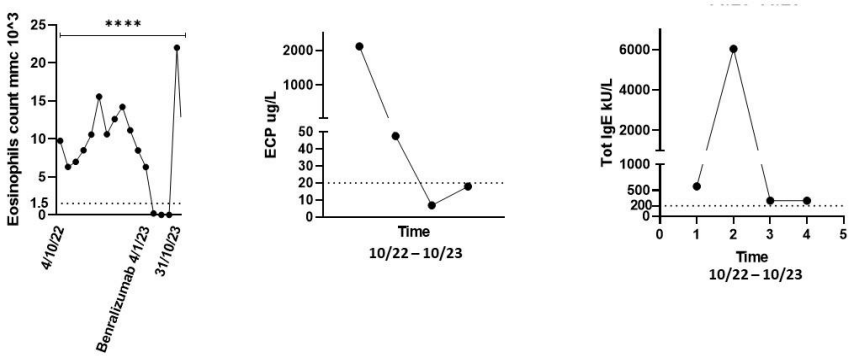
This abstract provides a summary of the case of a patient who suffered from steroid resistant BP and hyper-eosinophilic syndrome.

RESULTS

A 53 years old woman with major depression and a steroid resistant BP diagnosis in her clinical history, referred to Dermatology ward because of a relapse of BP. Therapy started with methylprednisolone, Dupilumab and doxycycline. In the next days, hypereosinophilia emerged so dermatologists sent to our unit a request for medical consultation: signs and symptoms of secondary eosinophilia were excluded except for increased total IgE, ECP, CD3+CD4+ and CD3+CD8+ T cells in peripheral blood. Based on the clinical conditions, we chose Benralizumab to treat the patient. Suddenly the blood eosinophils count decreased 200/mm^3 without any advantage on BP. Therefore, we decided for the administration of Benralizumab and Dupilumab which brought a great amelioration of pemphigoid until the administration of Benralizumab each 8 weeks: eosinophils raised to 22.000/mm^3 so we switched it again every 4 weeks with a good control of both the diseases. Unfortunately, the patient passed away one year after the burdening of the diseases because of cachexia.

CONCLUSION

Finally, although new drugs are continuously developed, for many patients all the therapies are unsuccessful, leaving them without effective treatments for the rest of their lives. More research is needed to deepen our knowledge on eosinophils in health and diseases.



Blood Eosinophilic count, ECP and Total IgE values of the patient over time

CONFLICTS OF INTEREST

The authors did not specify any links of interest.