Dear Doctor,

Greetings from Micro Labs. We are happy to bring you "Allergy Connection" which contains latest and interesting news in the field of Allergy.

This issue contains:

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Looking forward to your valuable feedback
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Medical Team, Micro Labs Ltd

Correlation between Psoriasis and Allergic Multimorbidity of Asthma, Rhinitis, and Eczema among Adolescents

Introduction

Psoriasis is a chronic inflammatory skin disease caused by the immune system that is associated with several comorbidities, including psoriatic arthropathy, and psychiatric, cardiovascular, and hepatic disorders. Psoriasis affects an estimated 60 million individuals globally. In 2014, the World Health Organization defined psoriasis as a major non-communicable disease.[1] The systemic inflammation associated with psoriasis can lead to long-term damage to various tissues and organs. Limited studies have explored the relationship between psoriasis and allergic diseases, with most reporting positive associations suggesting shared pathogenesis.[2] So, this study aimed to evaluate the association between psoriasis and the co-occurrence of asthma, rhinitis, and eczema in adolescents.

Methods

This was a school-based cross-sectional study that included adolescents aged 11–14 years. Parents/guardians completed a questionnaire to report on their child's health conditions. This study assessed every doctor-diagnosed psoriasis through a specific question directed at parents. Allergic diseases were evaluated using the International Study of Asthma and Allergies in Childhood (ISAAC) methodology. Current asthma, rhinitis, and eczema were defined based on reported diagnoses and symptoms within the past year. This analysis included various combinations of these conditions, allowing for the classification of participants into non-overlapping groups of allergic diseases. Covariates included birth mode, breastfeeding history, and exposure to second hand smoke. Statistical analyses and logistic regression were conducted to evaluate relationships between psoriasis and allergic diseases, adjusting for potential confounders.

Results

A total of 3,864 participating children yielded a response rate of 73.9%. Among the analytical sample of 3,710 participants, 3.5% reported having doctor-diagnosed psoriasis. The prevalence of current asthma, rhinitis, and eczema was estimated at 15.7%, 15.0%, and 10.3%, respectively. The prevalence of psoriasis was similar in male and female participants (3.4% vs. 3.7%, p=0.598) but higher in adolescents exposed to second hand smoke (4.3% vs. 2.9%) and those who had cats during infancy (7.6% vs. 3.3%). A lower prevalence was noted in those who were breastfed (3.1% vs. 4.8%, p=0.014). After adjustment, psoriasis was associated with increased odds of current asthma (aOR=1.93) and current eczema (aOR=5.36), but not rhinitis (Figure 1). However, psoriasis was associated with higher odds of single and co-occurring allergic conditions, which includes “asthma only,” “eczema only,” and combinations including “asthma+eczema” and “asthma+rhinitis+eczema.”

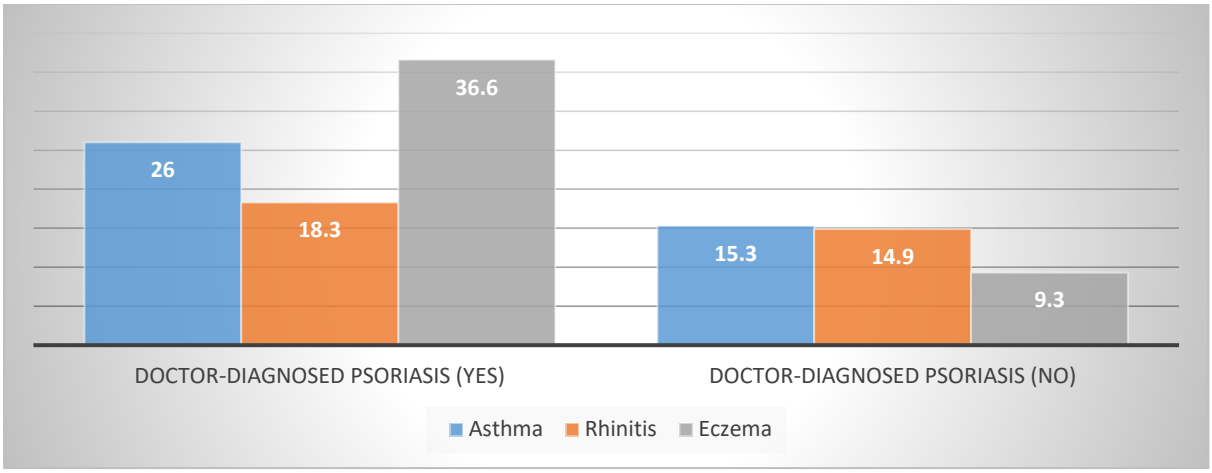

Figure 1. Association between ever doctor-diagnosed psoriasis and allergic diseases

Discussion

This study findings demonstrated a significant association between doctor-diagnosed psoriasis and increased prevalence of asthma and eczema, but not rhinitis. This suggested that psoriasis may coexist with allergic diseases and this relationship was not dependent on the presence of other conditions.[2] Previous research supported that there was an association between psoriasis and asthma, although the findings on rhinitis did not reach statistical significance.[3] The potential role of the IL-23/Th17 pathway in linking psoriasis to allergic diseases is noteworthy, as elevated IL-17 levels have been observed in both conditions. Shared genetic factors and environmental influences, including smoking and breastfeeding practices, may also play a significant role in this relationship.[2]

Conclusion

This study highlighted the associations between psoriasis and both single and co-occurring allergic diseases among adolescents, suggesting that their coexistence is common and warrants further investigation.

Psoriasis is significantly associated with increased prevalence of asthma and eczema in adolescents.

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Relationship Between Allergic Rhinitis and Chronic Rhinosinusitis in Children with IgA Vasculitis

Introduction

Immunoglobulin A vasculitis (IgAV), also known as Henoch-Schonlein purpura, is the most prevalent type of vasculitis in children. It is marked by skin bleeding due to the leakage of red blood cells into the skin or mucous membranes, which may occur because of damage to small blood vessels.[1] 20% to 80% of cases have renal involvement and significantly impacts long-term prognosis. The incidence of IgAV was estimated to be 3 to 27 cases per 100,000 children globally, with a higher prevalence in males and among children aged 4 to 7 years. Mucosal infections, particularly of the respiratory and intestinal tracts, are known triggers.[2] Previous cases have found patients with IgAV, are often accompanied by allergic rhinitis (AR), and/or chronic rhinosinusitis (CRS), suggesting that AR and/or CRS can be the triggers of IgAV. There was no related data on the correlation between AR, CRS, and IgAV. So, this study aimed to evaluate the relationships between IgAV, AR, and CRS.

Methods

This retrospective study included children hospitalized with IgAV. Clinical data were assessed including gender, age, manifestations, and the presence of AR and CRS. The patients were categorized into four groups: simple AR, simple CRS, AR combined with CRS, and non-AR/CRS. Statistical analyses were conducted to evaluate differences between groups and identify factors associated with renal involvement.

Results

Out of 552 hospitalized children, 504 children with IgAV were included for final analysis (272 males, 232 females; average age 8.6 ± 3.5 years). Clinical manifestations included abdominal pain in 231 cases (45.8%), arthritis in 310 cases (61.5%), renal involvement in 244 cases (48.4%), and recurrent rash in 187 cases (37.1%). About 357 (70.8%) cases of IgAV combined with AR or CRS, including 51 cases with simple AR, 70 with simple CRS, and 236 with AR + CRS. There were 147 children with non-AR or non-CRS. Statistical comparisons indicated that the incidence of renal involvement and recurrent rash was significantly higher in the AR + CRS group compared to the non-AR/CSR group (Figure 1). Logistic regression analysis identified age, abdominal pain, recurrent rash, simple AR, and AR with CRS as risk factors for renal involvement.

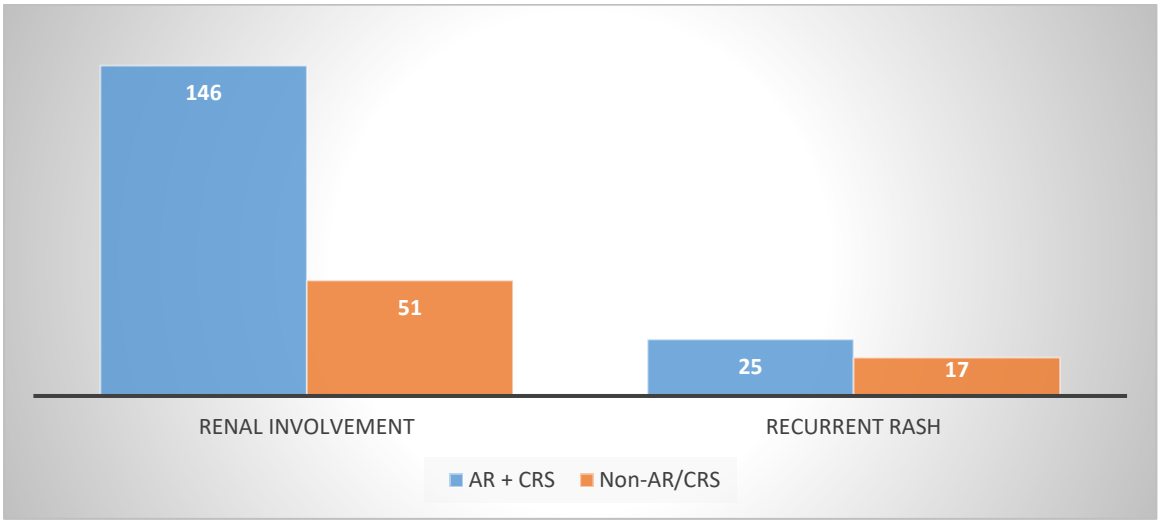

Figure 1. Comparison of IgAV between AR+CRS group and Non-AR/CRS group

Discussion

This study highlighted a significant association between AR, CRS, and IgAV, suggesting that both may act as triggers for this condition. Studies have reported that 90% of patients with IgAV develop symptoms of upper respiratory tract infection within 3 weeks before onset. The high prevalence of AR and CRS among children with IgAV indicates a potential link, with AR possibly increasing the risk of renal involvement and recurrent rashes.[2] The findings align with previous studies showing a connection between IgAV and AR and/or CRS, suggesting that AR and/or CRS may be the triggers of IgAV.[3] Furthermore, interventions targeting chronic infections may reduce renal complications and recurrence rates. Limitations include the absence of comparative trials to confirm these associations.[2]

Conclusion

Chronic rhinitis, particularly AR and CRS, may play a significant role in the pathogenesis of IgAV. The presence of these conditions appears to increase the risk of renal involvement and recurrent skin symptoms in affected children.

Allergic rhinitis may be a risk factor for renal involvement and recurrent rash in patients with Immunoglobulin A vasculitis.

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Relationships among Visual analog scales, Total nasal symptom scores, and Peak nasal inspiratory flow in Children with Perennial Allergic Rhinitis

Introduction

Allergic rhinitis (AR) is a prevalent allergic condition in children, with global prevalence rates of 8.5% in those aged 6–7 years and 14% in adolescents aged 13–14 years.[1] Effective treatment is essential to prevent complications such as sinusitis and otitis media. AR significantly impacts patients' quality of life (QOL), leading to increased medication costs and physician visits. Traditionally, AR is classified as seasonal (SAR) or perennial (PAR). Recent guidelines have refined this classification based on symptom duration, severity, and impact on QOL. Subjective assessments, particularly the visual analog scale (VAS), are crucial for monitoring symptoms and adjusting treatment. VAS is highly associated with total nasal symptom score (TNSS) but negatively associated with peak nasal inspiratory flow (PNIF) in adults with AR. However, assessing AR in young children can be challenging, leading to a focus on parent-assessed VAS (P-VAS).[2] In addition, correlations among parent-assessed VAS (P-VAS), VAS, TNSS, and PNIF in children with AR were limited in the literature. This study aimed to investigate the correlation between subjective measurements (VAS, TNSS, P-VAS) and objective measurement (PNIF), in children and adolescents diagnosed with PAR.

Methods

This was a prospective observational study conducted on patients aged 6–18 years with diagnosed PAR. AR was confirmed through a skin prick test (SPT) for common aeroallergens. The daily Total Nasal Symptom Score (TNSS) was recorded alongside VAS and P-VAS ratings, while PNIF was measured using portable flow meters. Patients and parents documented their symptoms in an electronic diary (E-diary) over an 8-week period. Statistical analyses were performed to evaluate the results.

Results

A total of 2387 E-diary records were analyzed from 46 patients, with 38 consistently completing the E-diary daily. Based on AR symptoms patients were categorized into mild (60.9%) and moderate-severe (39.1%) PAR groups. The majority had a history of atopy and were sensitized to indoor allergens. The analysis revealed a strong correlation between VAS and P-VAS ($p < 0.001$) (Figure 1). Moderate correlations were found between VAS and TNSS ($r_s = 0.53$; $p < 0.001$) and P-VAS and TNSS ($r_s = 0.48$; $p < 0.001$). Weak negative correlations were observed between PNIF vs VAS, PNIF vs TNSS, and PNIF vs P-VAS. A weak negative correlation was also found between nasal congestion and PNIF. Notably, correlations varied

with severity, but a stronger correlation existed in the moderate-severe PAR group compared to mild PAR.

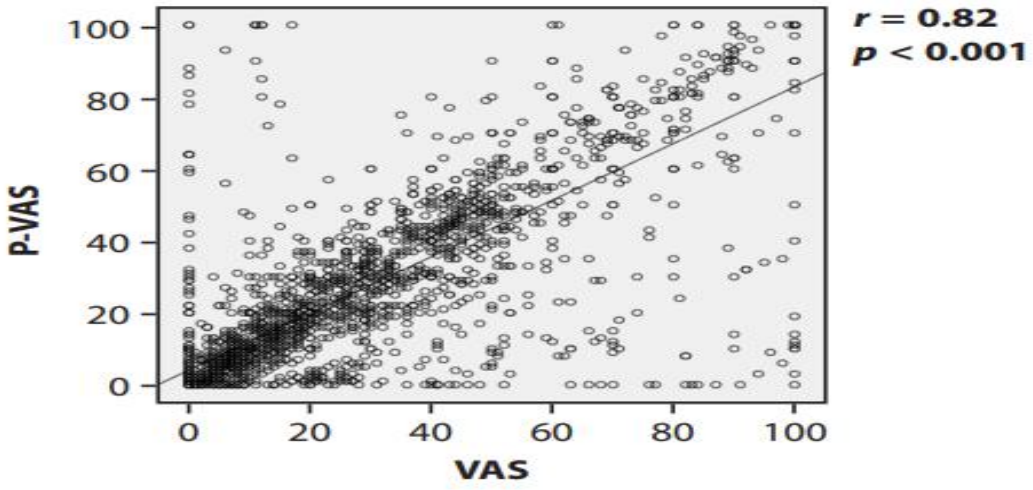

Figure 1. Correlations between symptom assessment using the visual analog scale (VAS) by patients and their parents (P-VAS)

Discussion

This study underscores the importance of effective symptom monitoring in AR treatment. VAS has been validated in adults, correlating well with objective measures. This study found weak negative correlations between PNIF and subjective assessments, suggesting that long-term nasal obstruction might lead patients to underestimate their symptoms.[2] These results align with the previous report showing a weak negative correlation.[3] The strong correlation was found between VAS and P-VAS indicating that parents can reliably assess their children's symptoms. Agreement levels between VAS and TNSS were fair overall, with better agreement in older children and those with more severe symptoms. The findings approach was useful in both subjective and objective measures for monitoring AR in children.[2]

Conclusion

This study recommends both subjective (VAS, TNSS) and objective (PNIF) measures for monitoring AR symptoms in children. Parent-assessed VAS (P-VAS) proved to be a reliable tool for evaluating nasal symptoms in younger patients unable to self-assess, highlighting the value of parental involvement in symptom management.

Parent-assessed Visual analog scale is a reliable tool to assess nasal symptoms among small children.

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Case Report on Ultrasound Guided Pulsed Radiofrequency Neuromodulation of Sphenopalatine Ganglion Treatment for Allergic Rhinitis in Children

Introduction

Allergic rhinitis (AR) is a chronic inflammation caused by immunoglobulin E (IgE)-mediated reactions to inhaled allergens and is characterized by sneezing, nasal congestion, nasal itching, and rhinorrhoea (nasal discharge).[1] Treatment usually involves medications or surgical interventions when conservative methods fail, though surgery carries significant risks. Recent studies suggest acupuncture targeting the sphenopalatine ganglion (SPG) can alleviate AR symptoms, but multiple sessions are often required. Pulsed radiofrequency (PRF) is a common technique in pain management to produce neuromodulatory effects without damaging nerve tissue.[2] This case report describes the use of pulsed radiofrequency (PRF) as a novel, single-session treatment for AR in a child who did not respond to traditional therapies.

Case Presentation

A 6-year-old female presented with paroxysmal sneezing, nasal congestion, and open-mouth breathing, persisting for over 30 months. Electronic nasopharyngoscopy examination revealed significant nasal obstruction due to adenoid hypertrophy and deviated septum blocking the posterior nasal aperture by about 70% (Figure 1), with allergy testing confirmed extreme sensitivity to dust mites, with a total IgE level of 876 IU/mL, leading to a diagnosis of allergic rhinitis (AR) and adenoid hypertrophy. Despite prior treatments, including nasal corticosteroids and oral montelukast, symptoms persisted, leading her parents to seek alternative options to avoid surgical intervention. After comprehensive preoperative evaluations, the child underwent ultrasound-guided PRF of the bilateral SPG. Before the initial consultation, the child underwent required preoperative evaluations and fasting. During the visit, a detailed history was taken, and her total nasal symptom score (TNSS) was recorded with parental assistance. An ultrasound evaluation of the pterygo-palatine fossa was then performed using a specialized ultrasound machine. The potential risks associated with the planned pulsed radiofrequency (PRF) procedure targeting the sphenopalatine ganglion (SPG) were discussed with her parents. Following the consultation, the child was taken to the post-anesthesia recovery unit to establish intravenous access. Using ultrasound guidance, the sphenopalatine ganglion (SPG) was targeted, and pulsed radiofrequency (PRF) therapy was performed with specific settings for temperature and duration. Following the procedure, a

mixture of medications was injected around the SPG to enhance the treatment. Before treatment, the child had a total nasal symptom score (TNSS) of 20. Post-PRF, her nasal congestion improved significantly, and she no longer breathed with her mouth open by the end of the night. During follow-up, the child experienced four upper respiratory infections but did not have any convulsions. While her nasal congestion and breathing issues returned temporarily during these infections, significant relief was observed after recovery.

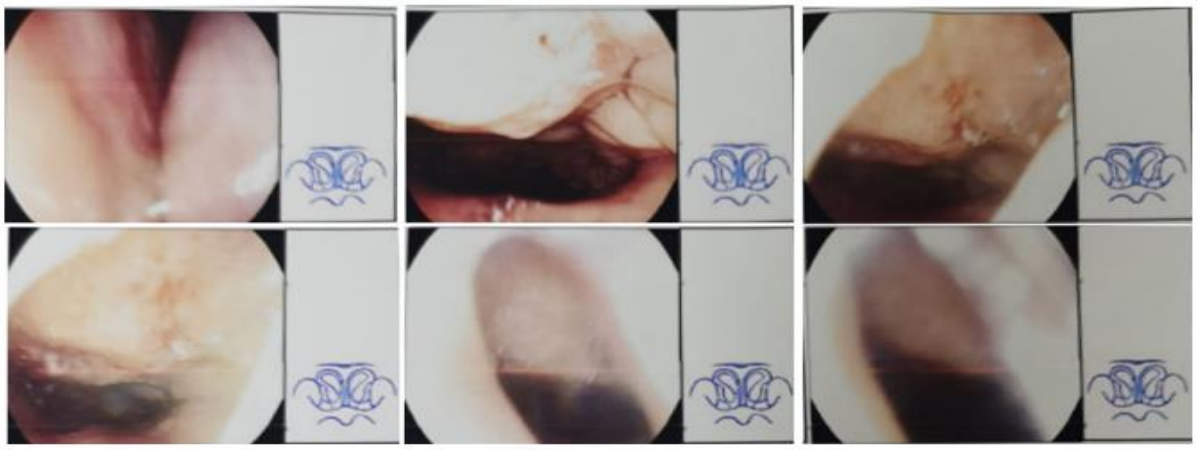

Figure 1. Preoperative fiberoptic nasolaryngoscopic findings

Discussion

Conventional AR treatments include environmental controls, medications, and immunotherapy, often utilizing glucocorticoids to manage inflammation. However, the risks associated with surgery and the need for multiple acupuncture sessions pose challenges, particularly for children. The SPG was integral to various autonomic functions, and its dysregulation was linked to AR. While prior interventions like acupuncture have shown promise, they often require repeated sessions, making PRF an attractive alternative due to its potential for efficacy in a single treatment.[2] Previous studies have also shown acupuncture of the sphenopalatine ganglion (SPG) was effective in relieving the symptoms of AR.[3] In this case, the child experienced immediate relief post-PRF, with a notable reduction in symptoms during a 24-week follow-up despite experiencing common upper respiratory infections.[2]

Conclusion

This case demonstrated that ultrasound-guided PRF of the SPG can effectively relieve AR symptoms in a child who previously failed conservative treatments. The treatment resulted in significant improvement in quality of life, suggesting PRF as a viable alternative to traditional methods.

Ultrasound-guided pulsed radiofrequency of the sphenopalatine ganglion can effectively relieve allergic rhinitis symptoms in a child.

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