**Health-related quality of life among pediatric patients with food protein-induced enterocolitis syndrome**

**Background**

Food protein-induced enterocolitis syndrome (FPIES) is a non-IgE-mediated food allergy that classically presents in infancy with delayed, repetitive vomiting 1 – 4 hours after ingestion of the food trigger1. This can be followed by diarrhea, pallor, lethargy and in more severe cases, hypotension requiring intravenous fluids1. While previously thought to be rare, recent studies have reported cumulative incidence rates between 0.015% and 0.7%2. The types of implicated foods vary geographically. In North America, cow’s milk, soy and rice are the most common food triggers3.

The diagnosis of FPIES relies on careful clinical history in the absence of validated biomarkers. Although the publication of international consensus guidelines in 2017 has improved awareness among healthcare providers, clinical ambiguity and delayed diagnosis continue to be important issues2,4,5. Current recommendations for long-term management involves eliminating the implicated food from the diet for 12 – 18 months, followed by an oral food challenge to determine symptom resolution and readiness for reintroduction of the food1. The diagnostic challenges, prolonged avoidance and fear of reactions adversely affect quality of life4–10.

**Health-related quality of life**

Health-related quality of life (HRQoL) is a measure of self-perceived physical, psychological and social wellbeing11. Understanding how illness impacts quality of life provides insight into evaluating current guidelines, highlights barriers to adherence and identifies unmet needs that guide the development of novel treatment options.

**Diagnostic challenges**

Patients with FPIES face immense obstacles in arriving at a diagnosis. Their medical journey often involves visiting multiple different healthcare providers, extensive investigations, and unnecessary hospitalization4,7,10,12. Diagnostic uncertainties heighten anxiety surrounding food introduction, disrupting development of normal feeding skills8,13. In a recent international survey, increasing knowledge among healthcare professionals to avoid delay in diagnosis was identified as the top priority among parents of children with FPIES7.

**Strict dietary avoidance**

Caregivers of children with FPIES experience significant burden and anxiety associated with dietary elimination6. Studies have reported a greater impact of FPIES on caregiver HRQoL compared to IgE-mediated food allergy, which may be attributed to increased perceived degree of cross-reactivity and limited self-administered treatments5,6,9. Lower income, avoiding multiple foods and in particular, cow’s milk, are correlated with poorer caregiver’s HRQoL, higher stress, and lower self-efficacy4. This points to the challenges of avoiding common food allergens and finding nutritious, cost-effective alternatives. Plant-based formulas do not meet the recommended dietary allowance of micronutrients to promote growth and development14. Additionally, the cost of amino acid-based formulas may be prohibitive for families of lower socioeconomic status14. Children with restricted diets are at risk of nutritional deficiencies and consultation with a registered dietician is recommended.

These stressors are further compounded during social engagements such as dining out and attending school where there is less control over food options4,5,12. Maciag *et al*. found a correlation between caregiver perception of needing to avoid multiple foods and not attending daycare or school5.

**Conclusion**

FPIES remains an underrecognized diagnosis with limited research investigating its impact on HRQoL. The existing literature unanimously report significant psychosocial burden associated with delayed diagnosis and prolonged avoidance. Further research is needed to promote awareness and facilitate development of family-centered management plans.

**References**

1. Nowak-Węgrzyn A, Chehade M, Groetch ME, et al. International consensus guidelines for the diagnosis and management of food protein–induced enterocolitis syndrome: Executive summary—Workgroup Report of the Adverse Reactions to Foods Committee, American Academy of Allergy, Asthma & Immunology. *Journal of Allergy and Clinical Immunology*. 2017;139(4):1111-1126.e4. doi:10.1016/j.jaci.2016.12.966

2. Mathew M, Leeds S, Nowak-Węgrzyn A. Recent Update in Food Protein-Induced Enterocolitis Syndrome: Pathophysiology, Diagnosis, and Management. *Allergy Asthma Immunol Res*. 2022;14(6):587. doi:10.4168/aair.2022.14.6.587

3. Cianferoni A. Food protein-induced enterocolitis syndrome epidemiology. *Annals of Allergy, Asthma & Immunology*. 2021;126(5):469-477. doi:10.1016/j.anai.2021.02.006

4. Maciag MC, Herbert LJ, Sicherer SH, et al. The Psychosocial Impact of Food Protein-Induced Enterocolitis Syndrome. *J Allergy Clin Immunol Pract*. 2020;8(10):3508-3514.e5. doi:10.1016/j.jaip.2020.06.011

5. Maciag MC, Bartnikas LM, Sicherer SH, et al. A Slice of Food Protein–Induced Enterocolitis Syndrome (FPIES): Insights from 441 Children with FPIES as Provided by Caregivers in the International FPIES Association. *J Allergy Clin Immunol Pract*. 2020;8(5):1702-1709. doi:10.1016/j.jaip.2020.01.030

6. Meyer R, Godwin H, Dziubak R, et al. The impact on quality of life on families of children on an elimination diet for Non-immunoglobulin E mediated gastrointestinal food allergies. *World Allergy Organization Journal*. 2017;10:8. doi:10.1186/s40413-016-0139-7

7. Vazquez-Ortiz M, Khaleva E, Mukherjee S, et al. Challenges and unmet needs in FPIES from the parents and adult patients’ perspective: An international survey. *J Allergy Clin Immunol Pract*. 2023;11(4):1306-1309.e2. doi:10.1016/j.jaip.2022.12.017

8. Groetch ME, Atal Z, Nowak-Wegrzyn AH. Quality of Life and Feeding Difficulties Associated with Childhood Fpies and IgE-Mediated Food Allergies. *Journal of Allergy and Clinical Immunology*. 2016;137(2):AB239. doi:10.1016/j.jaci.2015.12.968

9. Greenhawt M, Schultz F, DunnGalvin A. A validated index to measure health-related quality of life in patients with food protein–induced enterocolitis syndrome. *Journal of Allergy and Clinical Immunology*. 2016;137(4):1251-1253.e5. doi:10.1016/j.jaci.2015.09.056

10. Schultz F, Westcott-Chavez A. Food protein-induced enterocolitis syndrome from the parent perspective. *Curr Opin Allergy Clin Immunol*. 2014;14(3):263-267. doi:10.1097/ACI.0000000000000059

11. Palermo TM, Long AC, Lewandowski AS, Drotar D, Quittner AL, Walker LS. Evidence-based Assessment of Health-related Quality of Life and Functional Impairment in Pediatric Psychology. *J Pediatr Psychol*. 2008;33(9):983-996. doi:10.1093/jpepsy/jsn038

12. Bartnikas LM, Nowak-Wegrzyn A, Schultz F, Phipatanakul W, Bingemann TA. The evolution of food protein–induced enterocolitis syndrome. *Annals of Allergy, Asthma & Immunology*. 2021;126(5):489-497. doi:10.1016/j.anai.2021.01.001

13. Chehade M, Meyer R, Beauregard A. Feeding difficulties in children with non–IgE-mediated food allergic gastrointestinal disorders. *Annals of Allergy, Asthma & Immunology*. 2019;122(6):603-609. doi:10.1016/j.anai.2019.03.020

14. Williams BA, Erdle SC, Cochrane KM, Wingate K, Hildebrand KJ. Cow’s milk alternatives for children with cow’s milk allergy and beyond. *Paediatr Child Health*. 2023;28(3):145-150. doi:10.1093/pch/pxac076