

## IAP - IJPP CME - 2024

**VERY EARLY ONSET INFLAMMATORY BOWEL DISEASE IN CHILDREN**

**\* Malathi Sathiyasekaran**  
**\*\* Ganesh R**

**Abstract:** *Very early onset inflammatory bowel disease, defined as inflammatory bowel disease with onset before 6 years of age, represents a distinct and increasingly recognized subset of pediatric inflammatory bowel disease. While sharing some phenotypic similarities with later-onset disease, very early onset inflammatory bowel disease often presents with unique challenges in diagnosis, pathogenesis, and management. This review aims to provide an overview of the current understanding of very early onset inflammatory bowel disease, highlighting its clinical characteristics, underlying myriad genetic etiologies, diagnostic approaches and therapeutic strategies.*

**Keywords:** *Very early onset inflammatory bowel disease, Children, Genetics, Biologicals.*

**Points to Remember**

- *Very early onset inflammatory disease (VEO-IBD) occurs in children younger than 6 years old.*
- *The causes of VEO-IBD can be varied and may involve a combination of genetics, the immune system and environmental factors. In some cases, there may be an underlying monogenic etiology or primary immune deficiency. Genetic testing is important for diagnosis.*
- *Early detection is crucial to ensure children receive timely treatment to manage inflammation, promote healthy growth and development and prevent complications.*
- *Children with IBD may experience extra-intestinal manifestations such as joint pain, eye inflammation, skin problems and mouth ulcers. In VEO-IBD, monitoring for growth failure and delayed puberty is particularly important.*
- *Psychological support is an important aspect of care, as children with VEO-IBD and their families may face challenges in coping with a chronic illness, managing medications and navigating school and social activities.*

**PS :** *All standard abbreviations of gene related locations and receptors are left as such for the users to refer to text books.*

**References**

1. Huang JG, Aw MM. Pediatric Inflammatory Bowel Disease in Asia: Epidemiology and natural history. *Pediatr Neonatol.* 2020 Jun; 61(3):263-271.
2. Kelsen JR, Sullivan KE, Rabizadeh S, Singh N, Snapper S, Elkadri A, et al. North American Society for Pediatric Gastroenterology, Hepatology and Nutrition Position Paper on the Evaluation and Management for

---

\* Senior Consultant,  
Pediatric Gastroenterologist

\*\* Senior Consultant and Head,  
Department of Pediatrics,  
Rainbow Children's Hospital,  
Chennai.  
email : mal.bwcs@gmail.com

- Patients With Very Early-onset Inflammatory Bowel Disease. *J Pediatr Gastroenterol Nutr.* 2020 Mar; 70(3):389-403.
3. Ouahed J, Spencer E, Kotlarz D, Shouval DS, Kowalik M, Peng K, et al. Very Early Onset Inflammatory Bowel Disease: A Clinical Approach With a Focus on the Role of Genetics and Underlying Immune Deficiencies. *Inflamm Bowel Dis.* 2020 May 12; 26(6): 820-842.
  4. Kuenzig ME, Fung SG, Marderfeld L, Mak JWY, Kaplan GG, Ng SC, et al. Insight Scope Pediatric IBD Epidemiology Group; Benchimol EI. Twenty-first Century Trends in the Global Epidemiology of Pediatric-Onset Inflammatory Bowel Disease: Systematic Review. *Gastroenterology.* 2022 Apr; 162(4):1147-1159.e4.
  5. Uhlig HH, Schwerd T, Koletzko S, Shah N, Kammermeier J, Elkadri A, et al. COLORS in IBD Study Group and NEOPICS. The diagnostic approach to monogenic very early onset inflammatory bowel disease. *Gastroenterology.* 2014 Nov; 147(5):990-1007.e3.
  6. Srivastava A, Sathiyasekharan M, Jagadisan B, Bolia R, Peethambaran M, Mammayil G, et al. Pediatric inflammatory bowel disease in India: a prospective multicentre study. *Eur J Gastroenterol Hepatol.* 2020 Oct; 32(10):1305-1311.
  7. Poddar U, Aggarwal A, Jayalakshmi K, Sarma MS, Srivastava A, Rawat A, et al. Higher Prevalence of Monogenic Cause Among Very Early Onset Inflammatory Bowel Disease in Children: Experience From a Tertiary Care Center From Northern India. *Inflamm Bowel Dis.* 2023 Oct 3; 29(10):1572-1578.
  8. Huang JG, Wong YKY, Chew KS, Tanpowpong P, Calixto Mercado KS, Reodica A, et al. Epidemiological characteristics of Asian children with inflammatory bowel disease at diagnosis: Insights from an Asian-Pacific multi-centre registry network. *World J Gastroenterol.* 2022 May 7; 28(17):1830-1844.
  9. Hall CHT, de Zoeten EF. Understanding very early onset inflammatory bowel disease (VEOIBD) in relation to inborn errors of immunity. *Immunol Rev.* 2024 Mar; 322(1):329-338.
  10. Crowley E, Muise A. Inflammatory Bowel Disease: What Very Early Onset Disease Teaches Us. *Gastroenterol Clin North Am.* 2018 Dec; 47(4):755-772.
  11. Li QQ, Zhang HH, Dai SX. New Insights and Advances in Pathogenesis and Treatment of Very Early Onset Inflammatory Bowel Disease. *Front Pediatr.* 2022 Mar 1;10:714054.
  12. Nambu R, Muise AM. Advanced Understanding of Monogenic Inflammatory Bowel Disease. *Front Pediatr.* 2021 Jan 22; 8:618918.
  13. Blaydon DC, Biancheri P, Di WL, Plagnol V, Cabral RM, Brooke MA, et al. Inflammatory skin and bowel disease linked to ADAM17 deletion. *N Engl J Med.* 2011 Oct 20; 365(16):1502-8.
  14. Fiskerstrand T, Arshad N, Haukanes BI, Tronstad RR, Pham KD, Johansson S, et al. Familial diarrhea syndrome caused by an activating GUCY2C mutation. *N Engl J Med.* 2012 Apr 26; 366(17):1586-95.
  15. Marks DJ, Miyagi K, Rahman FZ, Novelli M, Bloom SL, Segal AW. Inflammatory bowel disease in CGD reproduces the clinicopathological features of Crohn's disease. *Am J Gastroenterol.* 2009 Jan;104(1): 117-24.
  16. Zhu L, Shi T, Zhong C, Wang Y, Chang M, Liu X. IL-10 and IL-10 Receptor Mutations in Very Early Onset Inflammatory Bowel Disease. *Gastroenterology Res.* 2017 Apr; 10(2):65-69.
  17. Ganesh R, Sathiyasekeran M, Srinivas S, Narayanan RK. Clinical Spectrum of Monogenic Infantile-Onset Inflammatory Bowel Disease. *Indian J Pediatr.* 2022 May; 89(5):497-502.
  18. Pedersen J, LaCasse EC, Seidelin JB, Coskun M, Nielsen OH. Inhibitors of apoptosis (IAPs) regulate intestinal immunity and inflammatory bowel disease (IBD) inflammation. *Trends Mol Med.* 2014 Nov; 20(11):652-65.
  19. Nameirakpam J, Rikhi R, Rawat SS, Sharma J, Suri D. Genetics on early onset inflammatory bowel disease: An update. *Genes Dis.* 2019 Oct 15; 7(1):93-106.
  20. Zheng HB, de la Morena MT, Suskind DL. The Growing Need to Understand Very Early Onset Inflammatory Bowel Disease. *Front Immunol.* 2021 May 26;12: 675186.