

NEW THERAPEUTIC STRATEGIES IN PEDIATRIC INFLAMMATORY BOWEL DISEASE



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Background

Inflammatory bowel diseases (IBD), including Crohn's disease (CD), ulcerative colitis (UC) and IBD-unclassified (IBD-U) are a group of life-long chronic and relapsing inflammatory disorders of the gastrointestinal tract whose etiology has not been completely understood. The most recent evidences involve a complex interaction between host genetic, environmental and microbial influences, resulting in a dysregulated mucosal immune response against the commensal intestinal microbiota. The actual classification still distinguishes CD, characterized by the transmural, patchy inflammation with the potential involvement of all the gastrointestinal tract, from UC, mainly identified by the presence of continuous, superficial, mucosal inflammation, exclusively limited to the colon. IBD-U describes all those patients with colonic disease but who otherwise have features that are not specific for CD or UC. Nevertheless, it is now more evident that IBD encompasses a wide range of phenotypes with different responses to therapy and unpredictable natural history. This concept is particularly pertinent to paediatric IBD, which has several specific considerations when compared with adult IBD. These certainly include the relevant issues related to growth, development, pubertal maturation, bone health, and psychological impact on the patient and family, but also the unique features related to paediatric IBD phenotype, which is well-renowned to represent both a diagnostic and therapeutic challenge, being characterized by higher severity, including poor response to medical treatment, presence of extra-intestinal manifestations, and increased risk of surgery.

Main achievements

The research group has 3 active members (EM, MM and CS) of the Special Interest Group and 1 (AS) of the Pediatric Porto IBD Group of the ESPGHAN. It is therefore actively involved in several multicenter studies.

Members of the Group are authors of the latest ESPGHAN Guidelines and of the Position papers on the diagnosis, treatment and nutrition of the pediatric IBD.

The research activities allowed to clarify many aspects of disease pathogenesis and to define the better strategies for diagnosis, treatment and long-term management. As for the pathogenesis, our researches helped to elucidate the role of impaired autophagy on disease development with several publications. Additionally, we evaluated the impact of environmental and familial factors, as well as, the role of the cannabinoid receptor 2 functional variant in a cohort of pediatric patients with IBD. In the last 15 years, we were able to build a large biobank that allowed us to be involved in international genome wide multicenter studies, which led to 2 different publications in high impact factors journals. With regards to the diagnosis (AS) has been author of the Porto IBD Group guidelines on the diagnosis of Pediatric IBD, which first defined specific pediatric diagnostic algorithms. Furthermore, many studies have been conducted regarding extra-intestinal manifestations, including anemia management, the pancreatic involvement, the endothelial dysfunction and the bone health. As for the therapeutic strategies, members of the groups were authors of the most recent guidelines on Crohn's disease and Ulcerative colitis management. Additionally, the research group recently led the first position paper on Nutrition in Pediatric IBD. Many achievements have been reached in terms of conventional immunoregulatory therapies, such as azathioprine, and approved biological treatments, such as infliximab and adalimumab, helping clarifying patients' stratifications and long-term outcomes. Finally, more recently we have also started being focused on the importance of the transitional process to the adult unit of our young patients.

Future perspectives

In terms of pathogenesis, our efforts are currently focused on the definition of serological, endoscopic and radiological predictive factors of the natural history of pediatric IBD. In addition, we are currently involved in different international multicenter clinical trials on the efficacy and safety of new biologics drugs for the therapeutic management of pediatric UC and CD. New studies are ongoing on the outcomes of the surgical treatment in UC, as well as in CD, including the definition of the better therapeutic medical strategies to avoid recurrences.

Publications

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