

Gastrointestinal pathology in infantile and pediatric patients: the evidence of a pattern-based histological approach and of a multidisciplinary integration

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On behalf of GIPAD (The Italian Group of the Pathologists of the Gastrointestinal tract) and GIPPI (Italian Group of the Pathologists of Pediatric and Infantile disease)

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Infantile and pediatric pathology is a highly specific topic in clinical practice for both clinicians and pathologists. In fact, some diseases such as malformations, primary immunodeficiency, and tumors, are unique to these populations. Moreover, infantile and pediatric patients differ from the adult ones for epidemiology, symptoms, laboratory tests, prognosis, and therapeutic options. An appropriate clinical and pathological approach is imperative, with referral of patients to tertiary care centers in selected cases, which can benefit of a multidisciplinary integration and a dedicated diagnostic work-up.

Non-neoplastic gastrointestinal diseases (GIDs) represent the most frequent event in infantile and pediatric patients, as primitive affection or secondary involvement from an extra-GID, comprising a significantly heterogeneous group of disorders typically resulting in severe diarrhea and intestinal failure. Due to overlapping of symptomatology between different entities and their resistance to conventional treatments, often the pathologist is asked to define a final diagnosis and to discriminate between different etiologies, often different from those causing identical histological features in older patients. To avoid inappropriate diagnosis and relative delay in scheduled therapy, a histological pattern-based approach (also referred to clinical and laboratory integration) is to be preferred in our clinical practice. Beside the most frequent GIDs (inflammatory bowel disease [IBD], food-intolerance, infections, celiac disease, and primary immune deficiencies), recent advances in genetic testing have allowed identification of new monogenic disorders, the most frequent affecting the immune system, crucial to differentiate also for different therapeutic approach.

Pediatric and infantile neoplasms are biologically and morphologically distinctive entity from the adult one, also in the gastro-intestinal tract. The interplay of histologic examination and molecular profiling is imperative in prognostication and in therapy. Finally, malformations typically have an early onset in the first months of life and progress in mini-invasive surgery led to an improvement of life-quality in an appropriate diagnostic context.

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Conflict of interest

The Authors declare no conflict of interest.

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disease (GIPPI) shared aim to support daily practice for pathologists interested in infantile and pediatric GIDs, describing the salient histopathologic features and differential diagnosis, highlighting their most innovative genetic aspects, and briefly discussing the relevant therapeutic implications. A pattern-based histological approach is helpful in both non-neoplastic and neoplastic GIDs for a uniform and easy-to-interpret pathology report.

We hope this monography might be a useful “survival guide” for all general pathologists to approach pediatric and infantile GIDs.

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