

Pediatric gastroenterology and nutrition: present and future

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During the past thirty years, gastroenterology has evolved as a recognized pediatric subspecialty that has many of the characteristics associated with other subspecialties. As a result, a peer-reviewed journal,^[1] professional associations in various continents, task forces and examinations to assess professional competence in pediatric gastroenterology have been established.^[2] From the earliest pediatric texts, it has been clear that disorders of the digestive tract are central to any consideration of pediatric medicine or surgery. Over the years, individual pediatricians and various groups have contributed tremendously to our understanding of many gastroenterologic disorders. The rapid expansion of our understanding of the pathophysiologic basis of many gastrointestinal disorders, combined with the development of spectacular technology for observing hitherto mysterious events in the digestive tract organs, has provided the foundation for a higher level of professional expertise among physicians and other healthcare professionals in the field. Of particular importance is the more sophisticated understanding of the development and maturation of the digestive system during fetal and early post-natal life. Detailed controlled clinical studies of young patients with specific gastroenterologic defects have, in turn, contributed to our appreciation of normal developmental phenomena.

The twenty-first century will be a century of biotechnology marvels. With the cloning of the human genome,^[3] we are in much better control of our own destiny. Modern technology enables us to develop more complex, glamorous and expensive new diagnostic techniques for biopsy, imaging, endoscopy and genetic di-

agnosis. We are now able to visualize the inside of the gut with the help of wireless capsule endoscopes.^[4,5] The development of an ingenious double-balloon enteroscope^[6] has enabled us to reach the length of the small intestine and be able to perform the usual kinds of endoscopic procedures through the channel within the enteroscope.^[7] Moreover, the development of genetic engineering and immunology also allow us to treat patients with hitherto undreamed modalities. Gene therapy is now a reality though a few unexpected deaths have slowed down its development.^[8,9] The use of monoclonal antibodies in a myriad of diseases provides new hope to desperate patients with intractable conditions such as Crohn's disease.^[10,11] Tailor-made molecules like magic bullets will bring the suffering of patients with life-threatening diseases to an end. But are we ready to cope with the scientific revolution that is bringing all these good things to medicine?

The general pediatrician is overloaded with all kinds of information pertaining to different subspecialties and it is extremely difficult for him/her to excel in all areas. The pediatric subspecialist could help the generalist diagnose, treat and monitor patients with illnesses belonging to the various subspecialties at a higher level of technological expertise. In the case of pediatric gastroenterology, recent developments in the following areas would enable the gastroenterologist to provide assistance to the generalist in diagnosis and management:^[12] nutritional support of the sick child; inflammatory bowel disease; hepatitis B and C; cyclic vomiting; recurrent abdominal pain; malabsorption and maldigestion syndrome; acute and chronic diarrhea; peptic ulcer; cholestasis in infancy and childhood; hereditary and metabolic diseases; gastroesophageal reflux; familial polyposis and related cancerous and precancerous syndromes; short-bowel syndrome; food allergy and hypersensitivity of the gastrointestinal tract; and transplantation of the liver, small intestine and pancreas.

The emergence of pediatric gastroenterology as a specialized medical field has been based on an impressive expansion of knowledge related to the development of the gastrointestinal tract and the evolution of new technology for evaluating and treating young patients. As the field grows in size and scope, it will be impor-

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tant to continue to promote relevant science and technology while maintaining a close link with our colleagues in other subspecialties. To achieve a harmonious and productive melding of new science with traditional clinical pediatric values and attitudes, working closely with our general pediatric colleagues is mandatory and most desirable.

The field of pediatric gastroenterology is fairly well developed in advanced countries such as the USA and European countries. The training of subspecialists always poses a problem in the less developed nations. The availability of training facilities and experienced mentors are two big problems facing the training centers.

In Asian countries, the pattern of pediatric gastroenterological diseases is very different from that in western countries. The diseases that are quite commonly seen in the west such as cystic fibrosis, celiac disease, Crohn's disease and ulcerative colitis are relatively rare in the oriental population. As a result, the establishment of pediatric gastroenterology as a subspecialty is slow in this part of the world. It is hoped that we can learn from the experience of our American and European colleagues in the establishment of training programs for pediatric gastroenterologists, and better co-ordination among subspecialists in this region, in both training and research, will be desirable in the development of pediatric gastroenterology as a full-fledged subspecialty in the future.

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