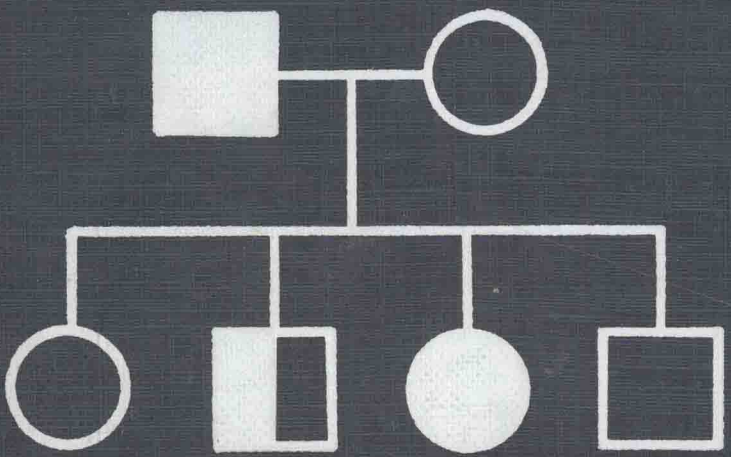
The Genetics and Heterogeneity of Common Gastrointestinal Disorders



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PREFACE

The genetic study of common gastrointestinal diseases is bedeviled by a host of problems. These include disease definition, ascertainment, delayed age of onset, high frequency in the population, variable expression, and heterogeneity. The tendency has been for the geneticist to avoid these problems by concentrating on the better delineated phenotypes of the rare disorders, and for the gastroenterologist to acknowledge a general genetic predisposition, but not to incorporate a genetic approach into his studies of pathophysiology, diagnosis, and treatment response. There has been a perceptible change from isolationism to collaboration during the past several years. Gastroenterologists and geneticists have begun a dialogue, and are beginning to utilize each other's techniques to investigate disorders of common interest. The result has been a rapid increase in our knowledge regarding the genetics of several of the common gastrointestinal disorders.

During the past several years, the editors, two geneticists and a gastroenterologist, have been engaged in research with other investigators, both within and without the Center for Ulcer Research and Education, into the genetics of peptic ulcer disease. The fact that this effort has resulted in rapid advancement of our knowledge about the genetics of peptic ulcer disease suggested the applicability of this type of approach to other common gastrointestinal disorders. Consequently, an international workshop was held in Indian Wells, California, on March 17–19, 1980. Investigators in such diverse fields as gastroenterology, genetics, epidemiology, pathology, mathematics, and immunology were brought together to assess the current state of the art of the genetics of common gastrointestinal disorders. The major purpose of the meeting was to foster future research in this area.

The topics covered at the workshop and presented in this volume include genetic approaches to common diseases; the genetics of peptic ulcer, chronic gastritis, lactase deficiency, gluten-sensitive enteropathy, imflammatory bowel disease, gastrointestinal cancer, gallbladder disease, gastrointestinal malformations; mathematical genetic ap-

proaches; gene marker association studies; and gene environment interactions.

It became increasingly clear during the workshop that genetic studies have a wide application to the study of common diseases. Such studies provide an extremely powerful tool to dissect out the pathophysiology and natural history of a disorder. In the process, genetic studies often reveal that the disorder under study consists of several distinct diseases. This important concept of etiologic and genetic heterogeneity has implications not only for pathophysiologic studies, but for diagnosis and therapy as well, since pathogenetically distinct disorders may well differ in their optimal therapy and prevention. Thus, gains in our knowledge regarding the genetics of the gastrointestinal diseases should ultimately improve our ability to diagnose and treat patients with common gastrointestinal disorders.

Investigators tend to congregate according to their special interests; however, as the workshop progressed, the enormous potential that exists for significant advances by combining the unique talents of each group in the study of common gastrointestinal disorders became apparent to all. The need for collaborative research on the common gastrointestinal disorders is an important message of this volume, and is applicable to the genetics and pathophysiology of all common diseases.

As has been evident, genetic studies have added a great deal to our knowledge about many of the common gastrointestinal disorders. At the present pace of work and with increasing sophistication in approaches, much more can be expected in the future. It is only appropriate that in the final chapter Richard McConnell, who might well be considered the "father of gastrointestinal genetics," summarizes where we have been and where we are going.

We hope that this volume provides the latest information on the genetics of the common gastrointestinal disorders. It will, we hope, serve as a starting point for future studies, and as a stimulus to future research into the genetics of common gastrointestinal diseases.

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