STATEMENT OF EDITORIAL PURPOSE
The Hospital Physician Gastroenterology Board Review Manual is a study guide for fellows and practicing physicians preparing for board examinations in gastroenterology. Each manual reviews a topic essential to the current practice of gastroenterology.

PUBLISHING STAFF
PRESIDENT, GROUP PUBLISHER
Bruce M. White

SENIOR EDITOR
Robert Litchkofski

EXECUTIVE VICE PRESIDENT
Barbara T. White

EXECUTIVE DIRECTOR OF OPERATIONS
Jean M. Gaul

NOTE FROM THE PUBLISHER:
This publication has been developed without involvement of or review by the American Board of Internal Medicine.

Crohn’s Disease: Diagnosis and Management

Contributors:
Daniel J. Kao, MD, PhD
Fellow, Division of Gastroenterology and Hepatology, Department of Medicine, University of Colorado School of Medicine, Aurora, CO

Mark E. Gerich, MD
Assistant Professor, Division of Gastroenterology and Hepatology, Department of Medicine, University of Colorado School of Medicine, Aurora, CO

Table of Contents

Introduction ...........................................1
Etiology ...............................................1
Distribution and Natural History .....................1
Clinical Features ......................................3
Diagnostic Approach ................................5
Management ..........................................7
Fertility and Pregnancy in CD .......................13
Conclusion ............................................14
Board Review Questions .............................14
References ..........................................14
Crohn’s Disease: Diagnosis and Management

Daniel J. Kao, MD, PhD, and Mark E. Gerich, MD

INTRODUCTION

Crohn’s disease (CD) and ulcerative colitis (UC) comprise the idiopathic inflammatory bowel diseases (IBD). CD is characterized by discontinuous distribution of transmural inflammation that can affect any region of the gastrointestinal tract. In contrast, inflammation seen in UC is not transmural, affects only the colon, and is continuous from its proximal extent to the rectum. The prevalence of CD is estimated at more than 150 cases per 100,000 persons, and combined medical and surgical costs associated with the disease are estimated at $2 billion annually in the United States.1 Despite advances in the medical management of CD, the natural history of the disease has not yet clearly been altered, although data on long-term outcomes from the newer era of biologic agents such as tumor necrosis factor (TNF) inhibitors is lacking. This manual reviews the etiology, clinical characteristics, diagnosis, and management of CD.

ETIOLOGY

The exact etiology of CD is not fully understood and is thought to be multifactorial, involving environmental exposures leading to a dysregulated immune response in a genetically susceptible host. The most recent meta-analysis of genome-wide association studies of CD revealed 163 genetic loci with significant associations, 110 of which are shared with UC and 30 of which are specific to CD, which accounts for an estimated 13.6% of total disease variance.2 Prominent candidate genes identified in these studies include NOD2, IL23R, ATG16L, and PTGER4, among many others. These and other studies have shown that alterations in innate immunity are important in the development of CD. Key elements in the pathogenesis of CD include compromised barrier function, altered microbial sensing, impaired autophagy, and an inability to mount an appropriate T-cell response.3 Investigations have demonstrated altered intestinal microbiota in which there is decreased microbial diversity in a characteristic pattern in CD compared to normal controls; however, the details and significance of these observations are not yet well understood.4

DISTRIBUTION AND NATURAL HISTORY

As previously mentioned, CD can affect any region of the gastrointestinal tract from the mouth to the perianal region. The reported distribution of