Gastrointestinal (GI) malignancies are a group of highly aggressive neoplasms of the gastrointestinal tract. They are a major public health issue worldwide and a leading cause of mortality and morbidity. Current diagnostic and therapeutic strategies manifest uncertain results and poor overall survival rates. There are multiple environmental and genetic factors that promote GI cancers. Regardless of traditional therapies such as surgery, radiotherapy, and chemotherapy, five-year survival rates for many patients remain low. Previous studies have suggested that GI malignancies are heterogeneous, recurring, and metastasizing. This is due to delayed diagnosis of the tumor in its later stages and to the resistance of tumor cells against drugs. This volume attempts to gather and put forward some novel therapeutic strategies used in the management of GI cancer.

GI malignancies include esophageal, pancreatic, gastric, liver, and colorectal cancers. These cancers are a major challenge to healthcare systems, as they are responsible for almost 25% of cancer-related mortalities. Clinical advances in the last decades have resulted in new diagnostic and therapeutic approaches. Nevertheless, there is an urgent need for more novel strategies, especially for metastatic GI cancers. Screening may be a potential method to diagnose the cancer in its early stage. However, the lack of effective screening, especially for pancreatic, colon, and liver cancers, highlights the need for more innovative screening and therapeutic approaches—for example, biomarkers and polymorphisms, which are reviewed by contributors to this volume.

GI cancers are extremely malignant and lethal. Small-intestine bacterial overgrowth (SIBO) is an abnormal increase in the bacterial population of the small intestine. It is a common GI problem often ignored in clinical settings, but it should be subject to increased awareness and clinical vigilance for better management of patients with GI malignancies and related disorders. Additionally, under certain circumstances aberrantly expressed long noncoding RNAs (lncRNAs) are associated with developing GI malignancies. Representing a class of more than 200 nucleotide RNA transcripts, lncRNAs have limited protein-coding capacity. They regulate multiple biological processes in cancers via control of molecular pathways and, in particular, play a crucial role in the development of metastasis.

Fatalities caused by GI cancers lead to aberrantly acting transcription factors and tumor suppressor genes. The present volume focuses on the transcription factors NF-κB1, STAT3, HIF-1α, and AP1, which play a key role in developing resistance to chemodrugs and promoting metastasis in GI cancers. Additionally, exploring the molecular mechanisms and signaling pathways that induce tumorigenesis is helpful in drug delivery and targeted therapies in order to improve therapeutic strategies.

Small-molecule–targeted therapies are now emerging for the management of various cancers. This volume focuses on the successes and limitations of small-molecule drugs that block processes such as angiogenesis which promote progression and metastasis.

GI malignancies are highly fatal because of delayed diagnosis, which is mainly due to the nonavailability of biomarkers. Biomarkers indicate disease stage along with disease response during treatment. Contributors discuss biomarkers and their developing use in diagnosing GI-related cancers. These discussions include circulating biomarkers–based diagnoses via liquid biopsy which have advantages over traditional medicine.

Single-nucleotide polymorphisms (SNPs) are an additional focus of this volume. These are genes associated with genetic susceptibility to cancer which are beneficial because of their potential as diagnostic and therapeutic biomarkers in a clinical setting. Gene SNPs that are involved in inducing colon cancer are reviewed.

Overall, the articles in this volume provide an in-depth understanding of biomarkers and therapeutic options that are currently available. It explores recent advancements, including those in the treatment of GI
malignancies. It has been my pleasure to edit this comprehensive volume that reviews therapeutic strategies that will hopefully benefit patients and their families.

REFERENCES


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