At the end of the 20th century, the biological features of gastrointestinal stromal tumor (GIST) were reported. Imatinib mesylate, a selective inhibitor of driver mutation for GIST such as KIT and PDGFRA, entered the clinical stage. As we move further into the 21st century, we have acknowledged the clinical effects of increasing overall survival time with imatinib therapy from 1.5 years to more than 5 years. Nevertheless, surgery remains a mainstay for the curative treatment of this tumor. A new understanding of a multidisciplinary approach for GIST is necessary for the best clinical decision.

This book presents a comprehensive, state-of-the art review of this field. It covers all aspects of GIST from epidemiology, pathological classification and evaluation, and molecular biology through to diagnosis, minimal invasive or aggressive surgery, radiotherapy, management, and therapeutic options including the latest molecular targeted agents.

This subject is addressed in five sections. The first section of the book presents the overview, the management of rectal and esophageal GIST, and Asian consensus guidelines. The overview covers its unique biologic behavior, clinicopathological features, molecular mechanisms, and treatment implications. Most cases of GIST arise in the stomach and small intestine, although esophageal and rectal GISTs are rare. Accurate diagnosis and combined surgery with imatinib therapy are recommended for both advanced esophageal and rectal GISTs. So many published guidelines exist: National Comprehensive Cancer Network (NCCN), European Society for Medical Oncology (ESMO), Asian consensus, Australia, United Kingdom, Canada, Japan, and Republic of Korea. Differences between Asia and other global guidelines are presented in this chapter. The second section addresses the general molecular character and pathogenesis of GIST. This section also explains that most GISTs harbor KIT or PDGFRA gain-of-function mutations and that a small number of GISTs exhibit mutation of NF1, RAS or RAF, and succinate dehydrogenase deficiency. The third section explains pathological diagnosis using endoscopic ultrasound guided fine needle aspiration biopsy, as well as radiology related to conventional computed tomography and magnetic resonance image. The fourth section describes surgical treatment for primary or metastatic lesions, and minimal invasive surgery using endoscopy. This section also describes molecular targeted therapy and radiotherapy. Several landmark trials have been published about imatinib, sunitinib, and regorafenib for metastatic GIST, and about imatinib for primary GIST after and before curative resection. Finally, the fifth section of the book presents examination of case reports of rare GIST. The various rare types of GIST are discussed individually, including extra-gastrointestinal GIST originated from the prostate, omentum, and peritoneum.

Every section provides a comprehensive summary of the current status of this field, which will help guide patient management and stimulate investigative efforts. All chapters were composed by experts in their fields, including the most up-to-date scientific and clinical information. We are thankful to all contributing authors for the time they devoted to sharing their knowledge and experience. This book constitutes an invaluable source of information for practicing medical oncologists, surgeons, radiologist, endoscopists, gastroenterologists, pathologists, and also trainees.

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