

# Gastrointestinal cancers: Advances in screening, diagnosis, and treatment modalities.

HanpShi Li\*

Department of Gastrointestinal Surgery, Capital Medical University, China

## Introduction

Gastrointestinal (GI) cancers encompass a range of malignancies affecting the digestive system, including the esophagus, stomach, liver, pancreas, gallbladder, colon, and rectum. These cancers pose significant health challenges worldwide, with varying incidence rates across different regions and populations. However, advancements in screening, diagnosis, and treatment modalities have led to improved outcomes for patients with GI cancers. This article explores these advances, highlighting key strategies and innovations in the management of GI malignancies [1].

Early detection is critical for improving the prognosis of GI cancers, as early-stage tumors are more amenable to curative treatments. Screening programs aim to detect precancerous lesions or early-stage cancers in asymptomatic individuals, allowing for timely intervention. Colonoscopy remains the gold standard for CRC screening, enabling the visualization and removal of precancerous polyps. Other modalities such as Fecal Occult Blood Testing (FOBT), Fecal Immunochemical Testing (FIT), and stool DNA testing are also used for population-based screening [2,3].

Endoscopic screening with Esophagogastroduodenoscopy (EGD) is recommended for individuals at high risk, such as those with Barrett's esophagus or chronic Gastroesophageal Reflux Disease (GERD). Ultrasonography and serum Alpha-Fetoprotein (AFP) testing are commonly used for HCC surveillance in high-risk populations, such as patients with chronic hepatitis B or cirrhosis. Screening strategies for gastric cancer vary by region, with endoscopy and upper Gastrointestinal (GI) series being among the recommended modalities in high-risk populations [4].

Advancements in diagnostic techniques have facilitated the accurate identification and characterization of GI cancers, allowing for personalized treatment approaches. Key diagnostic modalities include: High-definition endoscopy, Narrow-Band Imaging (NBI), and magnification endoscopy enhance the visualization of mucosal abnormalities, aiding in the early detection of GI malignancies. EUS enables the assessment of tumor depth, lymph node involvement, and vascular invasion, providing valuable staging information for GI cancers such as esophageal, gastric, and pancreatic cancer [5,6].

Cross-sectional imaging modalities such as CT and MRI play a crucial role in tumor staging and assessing the extent of disease involvement, guiding treatment decisions. Circulating Tumor DNA (ctDNA) and other liquid biopsy biomarkers offer non-invasive methods for detecting molecular alterations in GI cancers, facilitating targeted therapy selection and monitoring treatment response [7,8].

Treatment approaches for GI cancers are multimodal and often involve a combination of surgery, chemotherapy, radiation therapy, targeted therapy, and immunotherapy. Recent advances in treatment modalities have expanded therapeutic options and improved outcomes for patients: Laparoscopic and robotic-assisted surgical techniques have revolutionized the management of GI cancers, offering reduced morbidity and faster recovery compared to traditional open surgery [9].

Molecularly targeted agents, such as tyrosine kinase inhibitors and monoclonal antibodies, have shown efficacy in GI cancers by targeting specific molecular pathways involved in tumor growth and progression. Immune checkpoint inhibitors, such as pembrolizumab and nivolumab, have demonstrated activity in GI cancers by unleashing the body's immune response against tumor cells. These agents have gained approval for certain indications, including Microsatellite Instability-High (MSI-H) or Mismatch Repair-Deficient (dMMR) tumors. Advances in genomic profiling have facilitated the identification of actionable mutations and biomarkers in GI cancers, guiding treatment selection and predicting response to therapy [10].

## Conclusion

Gastrointestinal cancers present significant clinical challenges, but advancements in screening, diagnosis, and treatment modalities have transformed the landscape of GI oncology. Early detection through screening programs, coupled with accurate diagnostic techniques, enables timely intervention and improved outcomes for patients. Additionally, the advent of targeted therapy, immunotherapy, and precision medicine offers personalized treatment approaches tailored to the molecular characteristics of individual tumors. Continued research efforts and collaborations are essential for further advancing our understanding of GI cancers and optimizing patient care.

\*Correspondence to: HanpShi Li, Department of Gastrointestinal Surgery, Capital Medical University, China. E-mail: shihp2345@ccmu.edu.cn

Received: 09-Feb-2024, Manuscript No. AAAGIM-24-136849; Editor assigned: 13-Feb-2024, PreQC No. AAAGIM-24-136849(PQ); Reviewed: 22-Feb-2024, QC No. AAAGIM-24-136849; Revised: 26-Feb-2024, Manuscript No. AAAGIM-24-136849(R); Published: 29-Feb-2024, DOI: 10.35841/aaagim-8.1.220

## References

1. Smyth EC, Nilsson M, Grabsch HI, et al. Gastric cancer. *Lancet*. 2020;396(10251):635-48.
2. Chan SC, Liang JQ. Advances in tests for colorectal cancer screening and diagnosis. *Expert Rev Mol Diagn*. 2022;22(4):449-60.
3. Ladabaum U, Dominitz JA, Kahi C, et al. Strategies for colorectal cancer screening. *Gastroenterology*. 2020;158(2):418-32.
4. Kanth P, Inadomi JM. Screening and prevention of colorectal cancer. *BMJ*. 2021;374.
5. Harada K, Rogers JE, Iwatsuki M, et al. Recent advances in treating oesophageal cancer. *F1000Res*. 2020;9.
6. Huang FL, Yu SJ. Esophageal cancer: risk factors, genetic association, and treatment. *Asian J Surg*. 2018;41(3):210-5.
7. Song Z, Wu Y, Yang J, et al. Progress in the treatment of advanced gastric cancer. *Tumour Biol*. 2017;39(7):1010428317714626.
8. Wilkinson N. Management of rectal cancer. *Surg Clin North Am*. 2020;100(3):615-28.
9. Patel TH, Cecchini M. Targeted therapies in advanced gastric cancer. *Curr Treat Options Oncol*. 2020;21(9):70.
10. Oronsky B, Reid T, Larson C, et al. Locally advanced rectal cancer: The past, present, and future. *Semin Oncol*. 2020; 47(1): 85-92.