



Esophageal cancer: A global challenge requiring tailored strategies

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Abstract

In this editorial we comment on the article published in a recent issue of the *World Journal of Gastrointestinal Oncology*. Characterized by high mortality rates and geographical variations in its incidence, esophageal cancer poses a major global health challenge. This editorial article synthesizes insights from the review of esophageal cancer conducted by Qu *et al*, which highlights the importance of tailored screening and treatment strategies. Key themes include the effect of regional disparities on screening protocols, advancements in early detection methodologies, and therapeutic management disparities between different regions. By embracing personalized approaches grounded in regional nuances and technological innovation, the article advocates for comprehensive and collaborative efforts to improve patient outcomes in esophageal cancer care.

Key Words: Esophageal cancer; Screening; Early detection; Treatment; Regional disparities; Histological variations; Imaging technologies; Biomarkers; Therapeutic management

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Core Tip: Regional disparities and histological variations in esophageal cancer underscore the importance of tailored screening and treatment strategies. Customized screening protocols, advancements in imaging technologies, and integration of biomarkers are promising avenues for early detection and precision treatment. Embracing a multidisciplinary approach and technological innovations is crucial for improving outcomes in esophageal cancer management globally.

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INTRODUCTION

Esophageal cancer, a formidable adversary in the realm of oncology, continues to exact a heavy toll on global health, underscoring the urgent need for comprehensive strategies to combat this malignancy[1]. As highlighted in the insightful review conducted by Qu *et al*[2], the landscape of esophageal cancer care is characterized by multifaceted challenges, ranging from geographical variations in incidence to debates surrounding early detection and therapeutic management [2]. The main question addressed in this comprehensive review is how tailored strategies can improve the screening, early detection, and treatment of esophageal cancer, taking into account its geographical variations and histological subtypes. The review delves into the nuanced approaches required for effective management of esophageal cancer, emphasizing the need for personalized screening strategies that account for regional disparities and individual risk profiles. Additionally, it highlights the evolving landscape of early detection techniques, particularly the controversies pertaining to Barrett's esophagus (BE). The review underscores the importance of customized treatment, exemplified by region-specific advancements in endoscopic techniques for management of early-stage esophageal cancer. Overall, the review article of Qu *et al*[2] provides valuable insights into the multifaceted challenges of esophageal cancer management and the importance of tailoring strategies to improve patient outcomes.

GEOGRAPHICAL VARIATIONS IN ESOPHAGEAL CANCER

A salient point underscored in the review is the distinct geographical distribution of esophageal cancer, with East Asia, particularly China[3], bearing a disproportionate burden of this disease. Regional disparities necessitate tailored screening strategies that focus on the use of cost-effective methods aligned with predominant histological subtypes. Thus, the review emphasizes the importance of region-specific screening programs tailored to the histological subtype of esophageal cancer that is predominant in that region. In areas with a high incidence of esophageal squamous cell carcinoma (ESCC), including specific regions in China, cost-effective endoscopy-based screening that focuses on the early detection of precancerous lesions and early-stage ESCC is justified. By contrast, in regions where esophageal adenocarcinoma (EAC) is more prevalent, such as Europe and the United States, targeted screening of high-risk groups, including individuals with gastroesophageal reflux disease or BE, is recommended. These tailored screening approaches optimize resource utilization and improve early detection efficacy, thereby improving patient outcomes.

Furthermore, the review addresses the ongoing debates and challenges in early detection of esophageal cancer, particularly the challenges associated with the role of BE in EAC surveillance. Endoscopy-based screening has been proven to be efficacious in regions with high incidence of squamous cell carcinoma[4], and targeted approaches are warranted in areas with a prevalence of adenocarcinoma, where the emphasis should be on the importance of risk factor-based screening protocols. The incorporation of advanced imaging technologies, such as confocal laser endomicroscopy and volumetric laser endomicroscopy, holds promise as a way to enhance the accuracy of early diagnosis and risk stratification. Additionally, in the evolving landscape of early detection methodologies[5,6], the integration of biomarkers, such as microRNA signatures and circulating tumor DNA, into screening programs is a potential avenue for improving the precision of early detection, especially in high-risk populations. Innovations from high-definition endoscopy to artificial intelligence-driven diagnostic tools can enhance the accuracy and efficiency of esophageal cancer detection, thereby facilitating timely interventions and improving patient prognosis.

Regarding therapeutic management, the review article highlights the disparities in early stage esophageal cancer treatment between various regions, particularly in high-incidence areas such as China and Japan[7]. Advanced endoscopic techniques, such as endoscopic mucosal resection and endoscopic submucosal dissection, have emerged as effective minimally invasive treatment options that preserve esophageal functionality while ensuring oncological efficacy.

The journey toward improving the effectiveness of esophageal cancer care is not without its challenges. Resource constraints, infrastructural limitations, and cultural barriers pose formidable obstacles to the implementation of population-wide screening programs. Overcoming these hurdles will require a concerted effort, encompassing global collaboration, technological innovation, and targeted public health initiatives.

CONCLUSION

Addressing the multifaceted challenges posed by esophageal cancer requires a comprehensive and collaborative approach. By embracing tailored screening and treatment strategies grounded in regional insights, harnessing technological innovation, and prioritizing personalized medicine, we can make major strides toward improving patient outcomes and ultimately reduce the global burden of esophageal cancer. Let us forge ahead in the fight against this formidable disease, working toward a future in which early detection and effective treatment are accessible by all.

FOOTNOTES

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