LETTER to the EDITOR

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Revolutionizing Esophageal Cancer Care: The Power of Early Detection and AI

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Dear Editor

Esophageal cancer presents significant challenges due to its high mortality and morbidity rates, earning it sixth rank in cancer-related deaths worldwide. One of the major reasons for this is the ability of the cancer to stay undetected for a long duration and present only when it has reached the advanced stage making it arduous to treat. This late presentation and detection often lead to an ominous prognosis. The geographic variations in incidence, death rates, and histopathology of esophageal cancer underscore the necessity for increased screening and early detection measures [1,2].

Prognosis in the case of esophageal cancer depends directly on the stage at which it has been diagnosed, thereby early diagnosis gives a greater chance of survival. Late diagnosis, on the other hand, mostly results in adverse outcomes both in the treatment as well as in survival which proves the importance of developing strong screening and diagnostic mechanisms across the world.

A promising trial, the preSino trial, investigated the contribution of several diagnostic modalities to the detection of residual disease in patients receiving neoadjuvant chemoradiotherapy for esophageal squamous cell carcinoma. The trial employed newer modalities, including PET-CT, bite-on-bite biopsies, and endoscopic ultrasonography with fine-needle aspiration (EUS-FNA), to assess treatment response. The trial found that bite-on-bite biopsies and EUS-FNA provided a high sensitivity (82%) and specificity (93%) in the detection of locoregional residual disease. In addition, ctDNA positivity at the time of response assessments was found to be correlated with a higher risk of distant recurrence, implying that routine assessment may be used to identify those patients who can be benefited from deferring surgery or receiving additional systemic treatment. This indicates the potential utility of early surveillance in changing the natural history of the disease and enhancing patient outcomes [3].

While the perSino trial underscores the need for the early detection of the recurrence of cancer previously treated through various high-tech tests, with AI involved may be much more beneficial than mere simple endoscopy employed in the trial. Artificial intelligence-assisted endoscopy is among the most advanced approaches on the horizon in the diagnosis of gastroesophageal cancer that has made tremendous progress in recent history, especially with respect to diagnosing cancerous lesions, cancer invasion depth, and pathological prognosis. This process will enable the detection of abnormalities prior to symptomatology, which will permit earlier effective interventions. The use of AI in gastrointestinal endoscopy is a step forward in the detection of esophageal cancer and other GI diseases, bringing new hope to decrease mortality rates and increase patient survival [4].

Call of action

To combat the enormous increasing burden of esophageal cancer worldwide, healthcare policymakers and researchers, regulatory agencies, and clinicians need to make investment in Modern technologies like AI-based screening devices, incorporating these technologies into clinical care and develop screening guidelines can lower risk of end-stage diagnosis and favorable prognosis, further, public health education on esophageal cancer should be enhanced in high-risk groups, by facilitating the collaboration between technology developers and medical researchers we can pave the way for a future where esophageal cancer is detected early, treated well, and eventually, prevented.

Conclusion

regular screening and adoption of AI technologies are key to the battle against esophageal cancer. With improved early detection, we enhance the survival chance but also enable the possibility to personalize treatment modalities, avoiding or delaying major surgeries. Such developments can considerably reduce the disease burden of this lethal disease and provide patients with a better future.

References

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