EDITORIAL

Clin Endosc 2022;55:365-366
https://doi.org/10.5946/ce.2022.109
pISSN: 2234-2400 • eISSN: 2234-2443

Open Access

CLINICAL ENDOSCOPY

Lessons learned in clinical epidemiology of esophageal adenocarcinoma

Hye Kyung Jung

Department of Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea

See "Epidemiology of early esophageal adenocarcinoma" by Thuy-Van P. Hang, Zachary Spiritos, Anthony M. Gamboa, et al., on page 372–380.

The incidence of esophageal cancer differs significantly according to histological subtype worldwide. Esophageal adenocarcinoma (EAC) has significantly increased in developed countries; in contrast, esophageal squamous cell carcinoma (ESCC) has declined in many parts of the world.[1,2] Previous global epidemiological data show that the incidence of EAC overtook that of ESCC as early as the 1980s. In the USA, especially in white males, EAC has replaced ESCC as the dominant subtype. This switch occurred around 2008 in white women in the USA, 20 years after the crossover in white men.[3] One of the most important factors contributing to the increase in the incidence of EAC is generational changes in the prevalence of obesity in high-income countries.[4,5] Significant decrease in the incidence of ESCC in Western populations is likely due to decreased alcohol consumption and smoking.[6]

Hang et al.[7] reported that the annual percent change in the annual incidence of EAC from 1973 to 2017 was 767%, which was significantly greater than that of the other major malignancies in USA. They used the National Cancer Institutes' Surveillance, Epidemiology, and End Results Program which is a comprehensive population-based database on cancer in the USA. It covers approximately 35% of the USA population.[8] The average annual percent change in EAC incidence from 1973 to 1992 was 9.16% and that from 1992 to 2004 was 4.15%. However, this change plateaued from 2004 to 2017. The increase of EAC over decades may be driven by the increasing incidence of obesity in the USA population. There are several evidences that obesity causes EAC by both gastroesophageal reflux disease (GERD) related effects, with Barret's esophagus and/or dysplasia and non-GERD related mechanisms, such as systemic inflammatory alterations.[9] The authors explained that this plateau of incidence of EAC might be related to the long-term effects of proton pump inhibitors, which can mitigate the inflammation caused by reflux. However, as of now, there are limited data that reflect the low rate of regression to neoplasia in Barret's esophagus with chemo-preventive effect of proton pump inhibitors.[10] The rapid increase in obesity from the early 1970s slowed down in the 2000s, reaching a plateau,[11] and there is a possibility that the epidemiological characteristics of esophageal cancer will follow these epidemiological changes in obesity, the most powerful factor related to the development of EAC.

Although treatment modalities and their effectiveness have improved in recent decades, the prognosis of esophageal cancer is poor in patients with EAC and ESCC. The prognosis of esophageal cancer also depends on cancer staging. In this study, 18.7% cases had early esophageal cancer, including Tis, T1a, and T1b lesions, which are potentially resectable, and this propor-

Received: March 28, 2022 **Revised:** April 17, 2022
Accepted: April 18, 2022

Correspondence: Hye Kyung Jung
Department of Internal Medicine, College of Medicine, Ewha Womans University, 1071 Anyangcheon-ro, Yangcheon-gu, Seoul 07985, Korea
E-mail: junghk@ewha.ac.kr

tion has been decreasing over the past decade. Epidemiological studies of ESCC in South Korea showed a significant increase in early esophageal cancer detection with an endoscopic surveillance program for gastric cancer screening, which has led to increased survival.[12] The American College of Gastroenterology recommends endoscopic surveillance in patients at high risk for Barrett's esophagus; however, routine screening is limited to men with reflux symptoms and multiple risk factors such as old age, Caucasian race, central obesity, smoking history, and family history of Barrett's esophagus or EAC.[13] However, the evidence for adhering to this guideline and the resulting cancer preventive effect is not yet clear. Further studies are needed to derive a risk model that identifies persons at high risk of EAC through external validation prior to clinical application and to determine the appropriate surveillance program.

Conflicts of Interest

The author has no potential conflicts of interest.

Funding

None.

ORCID

Hye Kyung Jung https://orcid.org/0000-0002-6653-5214

REFERENCES

1. Arnold M, Ferlay J, van Berge Henegouwen MI, et al. Global burden of oesophageal and gastric cancer by histology and subsite in 2018. Gut 2020;69:1564–1571.
2. Launoy G, Bossard N, Castro C, et al. Trends in net survival from esophageal cancer in six European Latin countries: results from the SUDCAN population-based study. Eur J Cancer Prev 2017;26:S24–S31.
3. Arnold M, Laversanne M, Brown LM, et al. Predicting the future burden of esophageal cancer by histological subtype: international trends in incidence up to 2030. Am J Gastroenterol 2017;112:1247–1255.
4. Thrift AP, Whiteman DC. The incidence of esophageal adenocarcinoma continues to rise: analysis of period and birth cohort effects on recent trends. Ann Oncol Off J Eur Soc Med Oncol 2012;23:3155–3162.
5. Lagergren J, Bergström R, Lindgren A, et al. Symptomatic gastroesophageal reflux as a risk factor for esophageal adenocarcinoma. N Engl J Med 1999;340:825–831.
6. Pandeya N, Olsen CM, Whiteman DC. Sex differences in the proportion of esophageal squamous cell carcinoma cases attributable to tobacco smoking and alcohol consumption. Cancer Epidemiol 2013;37:579–584.
7. Hang TP, Spiritos Z, Gamboa AM. Epidemiology of early esophageal adenocarcinoma. Clin Endosc 2022;55:372–380.
8. National Institutes of Health. SEER*Stat Software (version 8.4.0) [Internet]. Maryland: National Institutes of Health; c2022 [cited 2022 Apr 22]. Available from: https://seer.cancer.gov/seerstat/index.html.
9. Paris S, Ekeanyanwu R, Jiang Y, et al. Obesity and its effects on the esophageal mucosal barrier. Am J Physiol Gastrointest Liver Physiol 2021;321:G335–G343.
10. Sikkema M, de Jonge PJ, Steyerberg EW, et al. Risk of esophageal adenocarcinoma and mortality in patients with Barrett's esophagus: a systematic review and meta-analysis. Clin Gastroenterol 2010;8:235–244; quiz e32.
11. Hruby A, Hu FB. The epidemiology of obesity: a big picture. Pharmacoeconomics 2015;33:673–689.
12. Jung HK, Tae CH, Lee HA, et al. Treatment pattern and overall survival in esophageal cancer during a 13-year period: a nationwide cohort study of 6,354 Korean patients. PloS One 2020;15:e0231456.
13. Shaheen NJ, Falk GW, Iyer PG, et al, American College of Gastroenterology. ACG clinical guideline: diagnosis and management of Barrett's esophagus. Am J Gastroenterol 2016;111:30–50; quiz 51.