Alarming Increase In Prevalence Of Esophageal Canceer And Barrett's Esophagus In Middle-Aged Patients: Findinds From A Statewide Database Of Over Five Million Patients

Abstract 671

Introduction: Barrett's esophagus (BE) is traditionally thought of as a disease of elderly white males. The prevalence of both BE and esophageal cancer (EC) is thought to have plateaued in recent years. However, such a trend may be age- dependent. We aimed to assess the prevalence of BE and EC based on age group in an extensive statewide database of over 5 million patients

Methods: This analysis was conducted using electronic health record data from the OneFlorida Clinical Data Research Network. The database covers more than 40% of Floridians. We used ICD-9 and ten codes to identify patients who carry diagnoses of EAC and BE in the overall population from 2012 to 2019. The primary outcome of interest was the adjusted prevalence of BE and EC in the population. This outcome was adjusted per 100,000 patients. Age was categorized into three groups: young patients (18 -44), middle-aged (45- 64), and elderly (>65 years). Regression analysis assessed the association between the number of risk factors and BE. We reported beta coefficient and p- values. We used the Chi-square test to look for differences between proportions. The IRB approved the study at the University of Florida.

Results: The number of patients included in the database varied by year and ranged from 4,238,884 to 5,411,838 adult patients. Gender distribution in the most recent year (2019) was 42.8% (n=2,223,498) males and 57.1% (n=2,964,538) females. Of all patients, 40% (n=2,068,086) are white, and 22.2% (n=5,188,036) were African American.

The prevalence of EC varied significantly by age group and was higher in the elderly group than the middle-aged group in each year ($p<0.0001$). The prevalence of EC was stable over time in elderly group, but increased logarithmically ($y=19\ln(x) + 94$, $R2=0.97$) from 49 to 94 per 100,000 in the middle-age group (figure 1a).

Similarly, the prevalence of BE in the middle-aged group increased logarithmically ($y=69\ln(x) + 3147$, $R2=0.94$) from 304 in 2012 to 466 per 100,000 in 2019 (figure 1b). In subgroup analysis, the rate of increase in BE prevalence was highest in the 51-60 years age group, followed by 61 -70 years, then 41-50 group (figure 2a). In the same time period, utilization of EGD in the population was stable (Figure 2b).

Conclusions: While the prevalence of EC and BE appears to have plateaued in the elderly, the current study shows that the most concerning trend is in middle-aged patients with an increasing prevalence of EC and BE despite the lack of increase in the use of endoscopy. To our knowledge, this is the largest population dataset to show this trend, which may significantly affect our strategies to screen patients for BE and EC.

Figure 1a: Prevalence of EC by age group

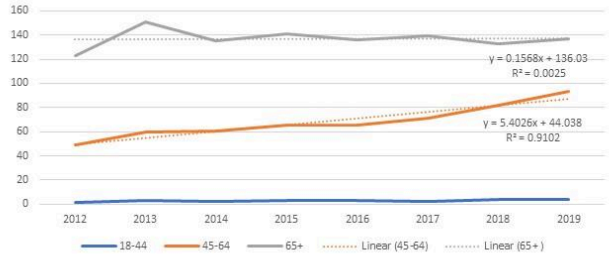

Figure 1b: Prevalence of BE over time

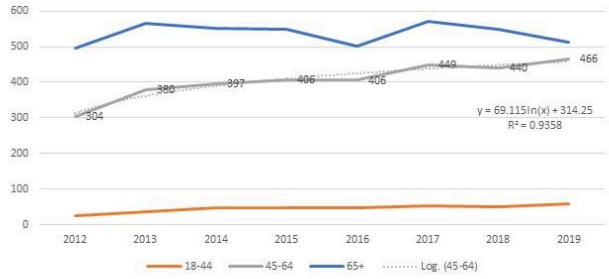

Figure 2a: subgroup analysis of prevelance of BE in middle aged patients

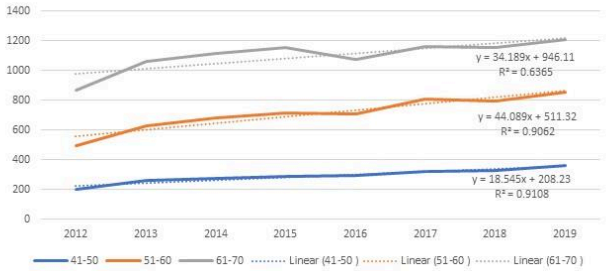

Figure 2b: number of endoscopies per 100,000 patients over time

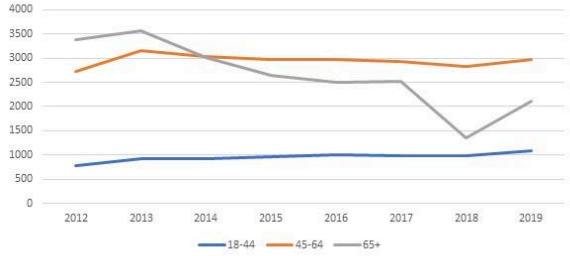

Table 1: rates of esophageal cancers and Barrett's Esophagus by year

Year	Age Group	Total	Total BE	Prevalence of BE	Total EAC	Prevalence EAC
2012	MiddleAge	704348	2142	304	347	49
	Elderly	773021	3825	495	952	123
2013	MiddleAge	777534	2956	380	463	60
	Elderly	820721	4632	564	1235	150
2014	MiddleAge	801916	3180	397	485	60
	Elderly	834956	4596	550	1128	135
2015	MiddleAge	842812	3424	406	552	65
	Elderly	849689	4671	550	1195	141
2016	MiddleAge	870392	3531	406	568	65
	Elderly	870115	4370	502	1183	136
2017	MiddleAge	852257	3823	449	608	71
	Elderly	851740	4853	570	1184	139
2018	MiddleAge	843669	3708	440	691	82
	Elderly	822878	4505	547	1095	133
2019	MiddleAge	808493	3768	466	756	94
	Elderly	770919	3957	513	1052	136