PREVALENCE AND PREDICTORS OF BARRETT's ESOPHAGUS AFTER A NEGATIVE INDEX ENDOSCOPIC EVALUATION : AN ANALYSIS USING THE GIQuIC DATABASE

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Introduction

- Current guidelines recommend single screening endoscopy in patients with multiple risk factors for Barrett's esophagus (BE).
- Data suggesting a low risk of BE after a negative esophagogastroduodenoscopy (EGD) are limited by small sample size and short follow-up after initial EGD. There remains a possibility of missed or incident BE after a negative index EGD.
- With the advent of cost-effective, non-endoscopic BE screening tools, repeat screening may be a consideration in high-risk patients.
- We aimed to determine the prevalence and predictors of BE after a negative index evaluation, on repeat EGD in a large national endoscopic database.

Methods and Materials

GI Quality Improvement Consortium Registry (GIQuIC), a large nationwide quality benchmarking clinical registry

We included patients who underwent at least 2 EGDs. Patients diagnosed with or with a history of BE or esophageal adenocarcinoma (EAC) at index EGD were excluded.

We calculated prevalence of BE/EAC on subsequent EGDs and assess association between predictors and outcome of BE/EAC on repeat EGD.

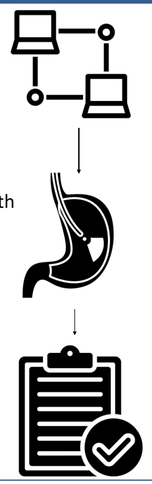


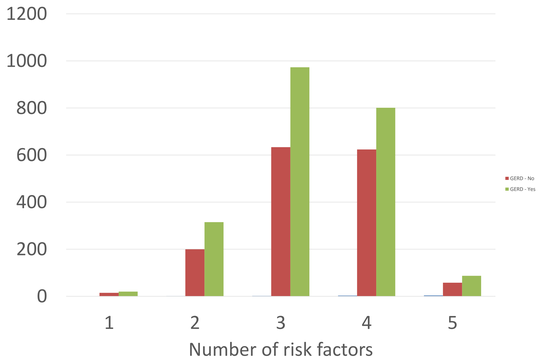
Table 1: Baseline characteristics of patients with and without BE/EAC on follow-up EGD after negative index EGD

Characteristic	Overall N = 214,318	No BE/EAC N = 210,591	BE/EAC N = 3,727	p-value
Age (years)				<.0001
<50	47,643 (22.2%)	47,029 (22.3%)	614 (16.5%)	
50-80	151,896 (70.9%)	148,953 (70.7%)	2,943 (79.0%)	
>80	14,779 (6.9%)	14,609 (6.9%)	170 (4.6%)	
Male sex	83,903 (39.1%)	81,909 (38.9%)	1,994 (53.5%)	<.0001
White race	145,918 (82.2%)	143,211 (82.1%)	2,707 (89.8%)	<.0001
GERD symptoms	75,281 (35.1%)	73,085 (34.7%)	2,196 (58.9%)	<.0001
Obesity (BMI > 30)	13,804 (36.0%)	13,421 (35.9%)	383 (37.4%)	0.31
Time interval between initial negative EGD and subsequent EGD				<.0001
< 1 year	104,366 (48.7%)	102,284 (48.6%)	2,082 (55.9%)	
1 - <3 years	73,034 (34.1%)	71,922 (34.2%)	1,112 (29.8%)	
3 - <5 years	29,387 (13.7%)	28,954 (13.7%)	433 (11.6%)	
>= 5 years	7,531 (3.5%)	7,431 (3.5%)	100 (2.7%)	
High risk population (GERD + at least one risk factor)	73,831 (34.4%)	71,655 (34.0%)	2,176 (58.4%)	<.0001

Results

- The prevalence of BE at index endoscopy in the GIQuIC database is 4.2%.
- A total of 346,060 patients underwent at least 1 EGD (mean number of repeat EGDs 2.45, range 2-96). Of these, 214,318 patients met our inclusion criteria (had at least two EGDs with the initial EGD being negative for BE/EAC.
- A total of 3,727 patients (1.74%) were found to have BE/EAC on repeat EGD .
- **Table 1** shows the prevalence of BE/EAC stratified by age, gender, risk factors and time interval between EGDs.
- Risk factors associated with BE/EAC on repeat endoscopy included GERD (OR: 2.93, p < 0.01), male sex (OR: 1.80, p< 0.01), White race (OR: 1.86, p< 0.01), age 50-80 years (OR: 1.65, p< 0.01).
- In patients with GERD and an additional risk factor, the prevalence of BE/EAC was higher at 3% at a mean (SD) time interval of 10.1 (24.4) months after a negative index EGD.
- The prevalence of BE/EAC increased with increasing number of risk factors (**Figure 1**).

Figure 1: Number of risk factors among patients diagnosed with BE / esophageal carcinoma, by GERD status



Discussion

- This is the largest study to date, examining the prevalence of BE/EAC on repeat EGD after a negative index EGD using data from GIQuIC.
- We demonstrate that rates of BE/EAC are not insignificant (when compared to the baseline rates at initial evaluation) and repeat BE screening may be considered in a subset of these patients, particularly with minimally invasive non-endoscopic tests.
- Our study highlights that in patients with two or more risk factors, the prevalence of BE was two-fold higher than the overall prevalence on repeat endoscopy.
- The prevalence of BE/EAC generally increased as the number of risk factors increased, which is consistent with BE prevalence estimates on index screening endoscopy.
- Strength of our study is that it includes data from both endoscopic findings and pathology reports to confirm a diagnosis of BE.

Conclusions

In conclusion, repeat evaluation for BE may be considered in patients with multiple risk factors a few years after negative initial evaluation. While repeat screening may have previously been considered cost prohibitive, the development of low cost, minimally invasive, non-endoscopic BE detection tools makes this a feasible possibility. Further studies are needed to confirm the prevalence of BE at prolonged intervals after negative index endoscopy before implementation of widespread repeat screening.

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