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Can We Predict Low Quality Colonoscopy? Establishing Open Access Colonoscopy at a Fellow-run Gastroenterology Clinic

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Background

- Adenoma detection rate (ADR) is considered the primary measure of quality with performance targets of $\geq 30\%$ for men and $\geq 20\%$ for women. Studies have shown a 3% reduction in CRC incidence and a 5% reduction in mortality for each 1% increase in ADR.¹
- Other quality measures include withdrawal time ≥ 6 minutes and $\geq 95\%$ cecal intubation rate with photo-documentation.¹
- Bowel preparation can affect all quality measures. A strong recommendation was given to provide both oral and written patient education instructions and emphasize the importance of compliance.²
- Open access colonoscopy (OAC) is the process by which a patient is referred directly for colonoscopy, without a pre-colonoscopy office visit. This can lead to decreased wait time which improves adherence.³
- Several studies demonstrate no differences in understanding or patient satisfaction compared with having a prior office visit.⁴ Studies have also shown no differences in cancellation and no-show rates.⁵ One study of 368 patients who underwent OAC demonstrated 87% of patients to have good or excellent bowel preparation.⁶
- A New York City-based study of screening colonoscopy among African American and Hispanic patients demonstrated OAC and a bilingual patient navigator resulted in successful completion in 66% of patients; an improvement over baseline.⁷

Methods

Objectives:

- Determine patient-specific factors and comorbidities which would preclude OAC eligibility and therefore increase time to screening colonoscopy
- Identify any difference in quality parameters between OAC eligible and ineligible patients

Study Design:

- Retrospective chart review of screening colonoscopies scheduled at our GI Clinic from July 1, 2016 to June 30, 2018
- Included only patients at average risk undergoing initial screening colonoscopy
- All patients seen at an office visit prior to their procedure
- Charts reviewed to determine eligibility for OAC
- Eligible patients were compared to ineligible patients using ADR, preparation adequacy, cecal intubation rate, and any procedure related complications

Exclusion Criteria for OAC Pathway

Moderate COPD or worse (5)	Moderate asthma or worse (2)	NYHA III CHF or worse (4)
CKD4-5 (7)	HgbA1c >8% (13)	Hemoglobin <9 g/dL (5)
BMI ≥ 40 (7)	Supplemental Oxygen	Prior complications of anesthesia (3)
Prior difficult intubation	Active ASCVD	Presence of AICD or pacemaker (2)
Non-ambulatory	Use of systemic anticoagulant or anti-platelet agent other than ASA (8)	

TABLE 1. Study exclusion criteria with incidence rates in parentheses.

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Results

- 45 of 68 (66.2%) patients would have been eligible for OAC
- Higher proportion of Hispanic patients (57%) enrolled, but also statistically more likely to be eligible for OAC
- Overall, no significant differences in quality indicators were found between the groups
- Individual factors found to be associated with inadequate prep:
 - NYHA class III CHF or worse*
 - CKD4-5
 - HgbA1c > 8%*
 - Use of systemic anticoagulant

**also associated with incomplete colonoscopy*
- No association between the presence of an exclusion criterion and ADR
- No procedure-related complications
- No difference in “no-shows” or cancellations – 22 overall, but evenly distributed with 11 in each group

	Analysis Sample (n=68)	OAC Eligible (n=45)	OAC Ineligible (n=23)	P Value
Age – Median (IQR)	54 (51-57)	54 (50.5-57)	55 (51-58)	0.457
Gender				0.426
Male	28 (41.18%)	17 (37.8%)	11 (47.8%)	
Female	40 (58.82%)	28 (62.2%)	12 (52.2%)	
Race				0.019
White	18 (26.47%)	7 (15.6%)	11 (47.8%)	
Hispanic	39 (57.35%)	29 (64.4%)	10 (43.5%)	
Black	5 (7.35%)	5 (11.1%)	0	
Other	6 (8.82%)	4 (8.9%)	2 (8.7%)	
Preferred Language				0.025
English	35 (51.47%)	18 (40%)	17 (73.9%)	
Spanish	32 (47.06%)	26 (57.8%)	6 (26.1%)	
Other	1 (1.47%)	1 (2.2%)	0	

TABLE 2. Comparison of demographics between eligible and ineligible patients of the analysis sample.

	Analysis Sample	OAC Eligible	OAC Ineligible	P Value
Preparation Adequacy				0.076
Inadequate	10 (14.71%)	4 (8.9%)	6 (26.1%)	
Adequate	58 (85.3%)	41 (91.1%)	17 (73.9%)	
Cecal Intubation				0.0399
No	6 (8.8%)	3 (6.7%)	3 (13%)	
Yes	62 (91.2%)	42 (93.3%)	20(87%)	
Adenoma				0.0408
No	5 (7.5%)	35 (77.8%)	16 (69.6%)	
Yes	16 (23.53%)	10 (22.2%)	6 (26.1%)	
Not Retrieved	1 (1.47%)	0	1 (4.3%)	

TABLE 3. Comparison of quality indicators between eligible and ineligible patients.

Discussion

- Literature on open access is robust, but pathways involving trainees and evaluation of exclusion criteria are less prevalent.
- Our study demonstrates no significant difference in quality indicators between the two groups, but interestingly, the ADR for ineligible patients (27.3%) was higher than that for eligible patients (22.2%).
- No difference in “no-shows” or cancellations between the groups, but unclear if this will translate to the actual open access pathway.
- Our study potentially identifies significant predictors of low quality colonoscopy: NYHA class III or IV CHF, CKD4-5, use of a systemic anticoagulant, and uncontrolled diabetes (HgbA1c 8% or greater). Further studies are required to confirm this finding.
- Our exclusion criteria require further examination in order to identify other potential risk factors or sub-populations at risk for low quality colonoscopy.
- Despite no significant differences, the trends also indicate that further evaluation is required to determine the true value of a pre-colonoscopy office visit to each patient.