2-2021

A Single Academic Center's Experience with Direct Access Colonoscopy

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Efficiency and Quality of Direct Access Colonoscopy (DAC) is non-inferior to Office Scheduled Colonoscopy (OSC)

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- No disclosures

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Introduction & Objectives

- Colorectal cancer: #3 most common cancer[1]
  - Often preventable- colonoscopy is preferred screening method
    - Proven to diminish incidence of colorectal CA[2]
- Traditionally, patients appropriate for screening or surveillance are referred to GIs for a pre-procedure consultation[3]
- Recently, PCPs directly refer low-risk pts for DACs without pre-procedure consultation[4-6]
  - DACs decrease interval to colonoscopy, increase screening and surveillance compliance, and decrease patient cost[7]
- Given that millions of colonoscopies in the U.S. are being done via DAC, there is a gap in understanding their efficacy and quality as compared to OSC
  - There are limited, conflicting evidence-based recommendations regarding appropriateness and standardization for DAC[7-12]

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Research Question & Hypothesis

- Research Question:
  - How does Jefferson's DAC program, unique in its algorithmic approach utilizing EMR, nurse practitioner, and navigator as needed, compare in its performance to that of traditional OSC?

- Hypothesis:
  - We hypothesize that the efficiency and quality of Jefferson's DAC program is non-inferior to OSC when appropriate evidence-based approaches are taken towards assessing individual patient's needs.

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Methods

- Study design: retrospective medical chart-review
- Population: 1823 patients aged 45-75, with a life expectancy of 10+ years, who have had a DAC for screening or surveillance from June 1, 2018 – July 31, 2019
- Intervention: DAC
- Comparison group: 828 patients aged 45-75, with a life expectancy of 10+ years, who have had a OSC for screening or surveillance from June 1, 2018 – July 31, 2019
- Outcome: compare prep adequacy, polyp detection rates, recall status, colonoscopy withdrawal time, cancellation rate, # of days from patient contact w/ GI office to colonoscopy, colonoscopy completion rate, and rate of follow-up between DAC and OSC groups (and hopefully prove non-inferiority)
- Data source and collection: EPIC
- Rationale: To analyze available patient data in the newly implemented DAC program and establish non-inferiority for evidence-based continuation
- Analysis : quality and efficiency multivariate analysis

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Results

	DAC (N = 1823)		OSC (N = 828)		P
Age (years), mean (sd)	58	(7)	61	(8)	0.001
Age (years), n (%)					0.001
40-49	50	2.7%	48	5.8%	
50-59	1053	57.8%	282	34.1%	
60-69	580	31.8%	356	43.0%	
70+	140	7.7%	142	17.1%	
Sex, n (%)					0.586
Male	783	43.0%	365	44.1%	
Female	1040	57.0%	463	55.9%	
Race, n (%)					0.001*
White	642	35.2%	377	45.5%	
Black	900	49.4%	270	32.6%	
Latino/Hispanic	89	4.9%	91	11.0%	
Other	192	10.5%	90	10.9%	
Indication, n (%)					0.001*
Screening	1609	88.3%	476	57.5%	
Surveillance	214	11.7%	352	42.5%	

DAC:

- Younger patients
- Greater proportion of patients identifying as Black
- Greater proportion of screening (vs. surveillance) indications

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Results

Successful Colonoscopy	DAC (N = 1143)		OSC (N = 473)		P
Time to colonoscopy (days), mean (sd)	36	(18)	42	(19)	0.001*
Boston Bowel Preparation Scale (BBPS), n (%)					0.054
6	91	8.0%	52	11.0%	
7	220	19.2%	104	22.0%	
8	504	44.1%	204	43.1%	
9	328	28.7%	113	23.9%	
Any Polyp, n (%)	726	63.5%	324	68.5%	0.056
Cancer, n (%)	3	0.3%	2	0.4%	0.597

- Mean time to colonoscopy less for DAC than OSC
- Similar bowel prep b/w DAC + OSC
- Polyp detection rates similar b/w DAC + OSC

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Results

Successful Colonoscopy (SC)	Total N	Completion DAC & OSC (90 days)		RR	(95% CI)	P
Age (yrs), n (%)						0.511
40-49	98	63	64.3%	1	Ref	
50-59	1335	810	60.7%	0.89	(0.76, 1.04)	
60-69	936	573	61.2%	0.89	(0.77, 1.04)	
70+	282	170	60.3%	0.77	(0.75, 1.06)	
Sex, n (%)						0.409
Male	1148	713	62.1%	1	Ref	
Female	1503	903	60.1%	0.97	(0.92, 1.04)	
Race, n (%)						0.001*
White	1019	653	64.1%	1	Ref	
Black	1170	645	55.1%	0.85	(0.79, 0.91)	
Latino/Hispanic	180	124	68.9%	1.08	(0.97, 1.21)	
Other	282	194	68.8%	1.05	(0.96, 1.15)	
Indication, n (%)						0.123
Screening	2085	1265	60.7%	1	Ref	
Surveillance	566	351	62.0%	1.07	(0.98, 1.15)	

- Successful colonoscopy (SC):
  - Black patients were less likely to achieve SC
  - Age, sex, identifying as Latino/Hispanic or other races, and screening and surveillance indications were not associated with achieving a SC

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Results

Unsuccessful Colonoscopy (UC)	DAC (N = 680)		OSC (N = 355)		P
Reason, n (%)					0.001*
Patient cancellation or no-show	428	62.9%	121	34.1%	
Cancellation due to prep or inadequate prep	79	11.6%	59	16.6%	
Other / Unknown	77	11.3%	79	22.3%	
Scheduled too far out	51	7.5%	80	22.5%	
Financial or insurance clearance	32	4.7%	8	2.3%	
Provider cancellation	13	1.9%	8	2.3%	

- For both DAC and OSC, patient no-show or cancellation was the most common reason for unsuccessful colonoscopy
- Proportionally:
  - More DAC patients cancelled or no-showed
  - More OSC patients scheduled >90 days from contact with GI office

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Conclusions

- **DAC is non-inferior to OSC** for primary endpoint of CC [DAC vs OSC: 62.7% vs 57.1%, RR 1.10, 95% LCL 1.04, P=0.001]
  - CC for **DAC remained non-inferior to OSC when adjusted for age, sex, race, and indication** [DAC vs OSC: 62.7% vs 57.1%, RR 1.16, 95% LCL 1.09, P=0.001]
  - Black patients less likely to achieve CC
- Quality (measured by polyp detection) was high and non-inferior for DAC
- Cancellation or no-show was the most common reason for UC
- In current literature, DAC programs are not standardized and there is a disparity between the evidence supporting standard of care OSC and DAC with respect to efficacy and quality
- Hospitals and tertiary care centers continuously strive to find evidence based methods to construct DAC programs
- Our results support the continuation of the DAC program and help guide future improvements to ensure optimal patient care

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Future Directions

- Replication of this study in different tertiary-care centers to support non-inferiority
- Identifying reasons for differences across races in reaching the primary endpoint of completed colonoscopy (CC)
  - Can the DAC program help minimize this difference?

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Acknowledgements

- Dr. David Kastenberg, Gastroenterology
- Kelly Moore, DAC Nurse Coordinator
- Mary White, MS4
- Michael McCarthy, MS2
- Vasil Mico, MS2
- Benjamin Chipkin, MS4
- Sophia Lam, MS2
- Eric Abrams

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