A population-based estimate of the extent of colorectal cancer screening in men with HIV

T Antoniou, N Jembere, R Saskin, A Kopp, RH Glazier
Department of Family and Community Medicine, St. Michaels Hospital
Institute for Clinical Evaluative Sciences

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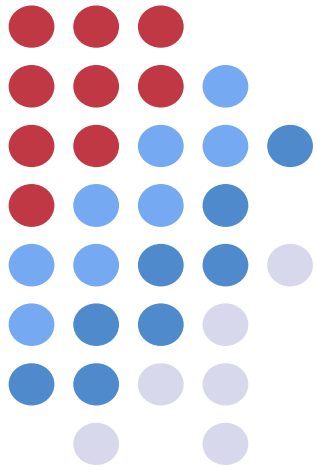
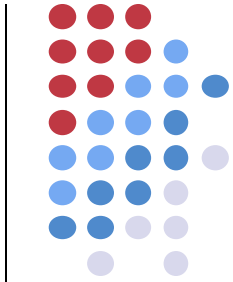
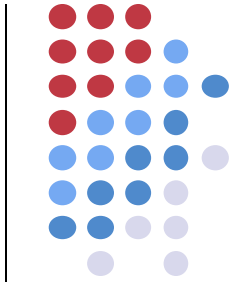


Conflict of Interest Disclosure



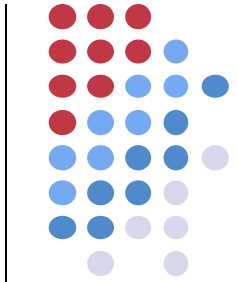
- None

Background



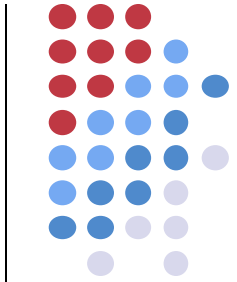
- Increased rates of non-AIDS defining malignancies, including colorectal cancer, described in persons with HIV
- In setting of HIV, colorectal cancer:
  - Occurs at a younger age
  - Diagnosed at a later stage
  - Associated with poor outcomes
- As cohort ages, need for age-appropriate cancer screening will increase
- No population-based data examining utilization of colorectal investigations in persons with HIV

Objectives



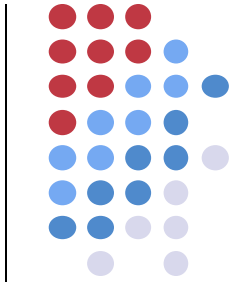
- Examine association of HIV status with receipt of colorectal cancer investigations in men aged 50 to 65 years in Ontario
  - Fecal occult blood testing, barium enema radiography, sigmoidoscopy, colonoscopy
- Identify factors associated with fecal occult blood testing and colonoscopy in men with HIV between the ages of 50 to 65

Methods – Data sources



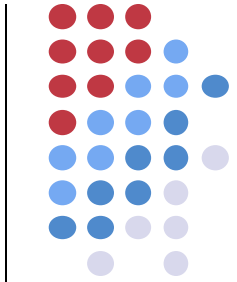
- Used administrative healthcare databases at Institute for Clinical Evaluative Sciences
  - Registered Persons Database – to identify cohort
  - OHIP – identify physician claims for colorectal investigations
  - CIHI DAD – diagnostic/procedural information on all patients discharged from hospitals and same day surgery units
  - Ontario Cancer Registry – to identify men with history of CRC

Methods – Study population



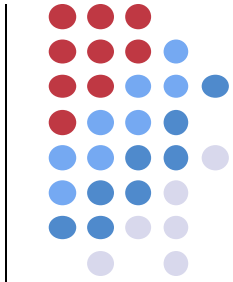
- RPDB to identify all men in Ontario aged 50 to 65 years alive and eligible for OHIP as of April 1, 2007
- From cohort of eligible men, identified men with HIV using a previously validated case-finding algorithm
- Excluded men, who in previous 5 years:
  - Diagnosis of inflammatory bowel disease or colorectal cancer
  - Receipt of any colorectal investigation

Methods – Outcomes



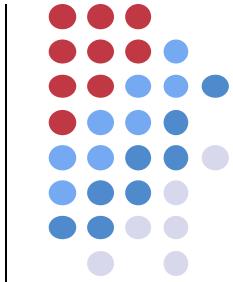
- Receipt of colorectal investigation:
  - Received FOBT within 2 years of cohort entry, or any one of colonoscopy, barium enema radiography or flexible/rigid sigmoidoscopy within 5 years of cohort entry
- Followed each person for up to 5 years following cohort entry until receipt of a colorectal investigation, death, or March 31, 2012

Methods – Analysis



- Main: multivariable Poisson regression models to examine receipt of each investigation with HIV status
  - Adjusted for age, neighborhood income quintile, urban vs. rural, no. of physician visits, visit with a gastroenterologist, comorbidity burden
- Secondary: Determined predictors for receipt of colonoscopy and FOBT in men with HIV only

Results

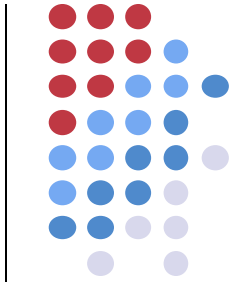


- 725,801 men eligible for analysis
  - 1,432 (0.19%) diagnosed with HIV
  - 308,270 (42.5%) received any colorectal investigation during follow-up

Results – Baseline Characteristics

Characteristic	HIV n = 1,432	Non-HIV N = 742,369	P-value
Mean age (SD)	54.9 (4.3)	56.2 (4.5)	<0.001
Rural residence	71 (5.0%)	110,943 (14.9%)	<0.001
Gastroenterologist	82 (5.7%)	14,644 (2.0%)	<0.001
Mean (SD) no. of MD visits	21.9	9.1	<0.001
Number of ADGs			< 0.001
Zero	38 (2.7%)	116,677(15.7%)	
1 to 3	370 (25.8%)	271,294 (36.5%)	
4 to 7	624 (43.6%)	265,225 (35.7%)	
8 to 10	249 (17.4%)	66,737 (9.0%)	
≥11	151 (10.5%)	22,436 (3.0%)	

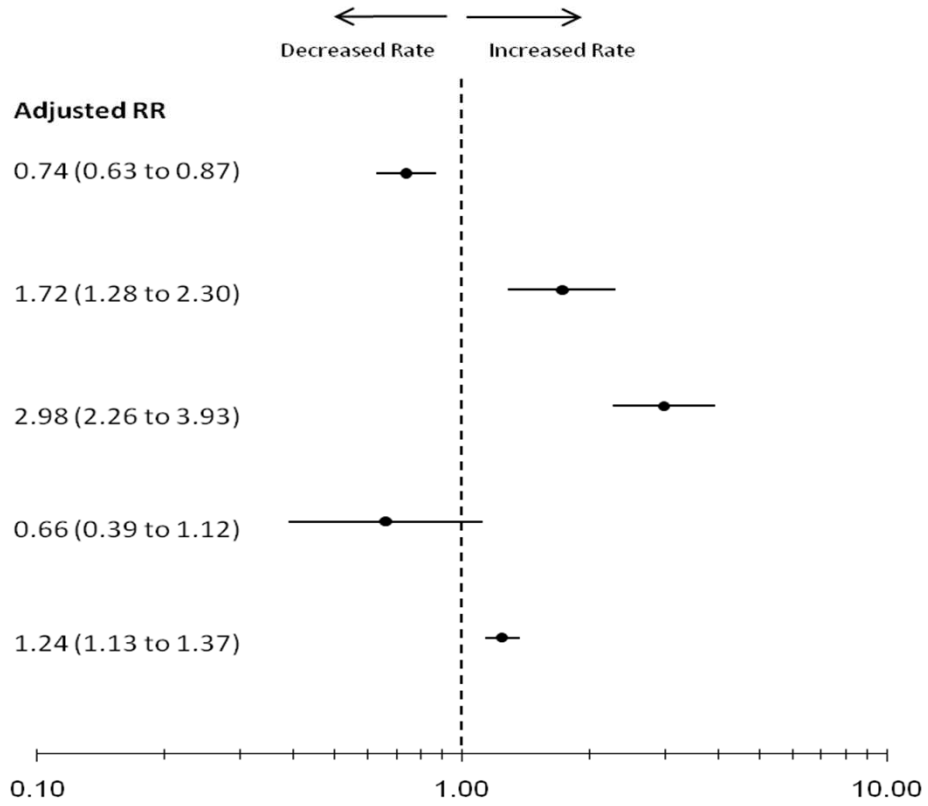
Results – Baseline Characteristics



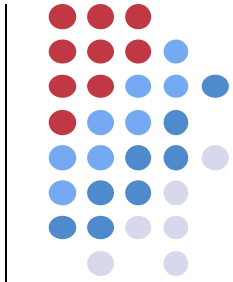
Characteristic	HIV n = 1,432	Non-HIV N = 742,369	P-value
Income Quintile			<0.001
1 (lowest)	452 (31.6%)	144,953 (19.5%)	
2	304 (21.2%)	148,317 (20.0%)	
3	229 (16.0%)	145,079 (19.5%)	
4	189 (13.2%)	147,895 (19.9%)	
5	233 (16.3%)	148,757 (20.0%)	

Adjusted rate ratios for receipt of colorectal cancer investigations

	n/N (HIV)	n/N (non-HIV)	Adjusted RR
FOBT	156/1,432	106,735/742,369	0.74 (0.63 to 0.87)
Flexible Simgoidoscopy	47/1,432	12,518/742,369	1.72 (1.28 to 2.30)
Rigid Sigmoidoscopy	51/1,432	7,311/742,369	2.98 (2.26 to 3.93)
Barium enema	14/1,432	9,272/742,369	0.66 (0.39 to 1.12)
Colonoscopy	435/1,432	171,731/742,369	1.24 (1.13 to 1.37)

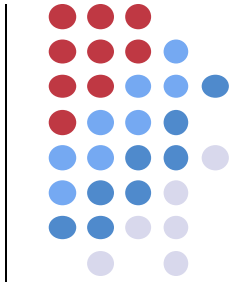


Predictors of colonoscopy and FOBT in men with HIV



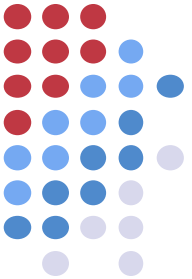
- 156 (10.9%) and 435 (30.4%) of men with HIV received FOBT or colonoscopy
- Colonoscopy
  - Lower comorbidity burden: aRR 1.27 (95% CI, 1.01 to 1.61)
  - High income vs. low income: aRR 1.13 (95% CI: 0.86 to 1.48)
  - Gastroenterologist: aRR 1.25 (95% CI: 0.85 to 1.84)
- FOBT
  - High income vs. low income: aRR 0.72 (95% CI: 0.42 to 1.22)

Limitations



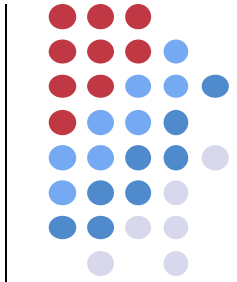
- Not generalizable to women, men < 50 years of age
- Could not distinguish between screening vs. diagnostic
  - Single center studies of find that these tests more likely to be for diagnostic vs. screening in HIV+ patients
  - Our results likely ‘best case’ scenario for screening that is likely an overestimate

Discussion & Conclusions



- CRC screening underutilized in men with HIV
  - Missed opportunity for early detection and management of colonic neoplasms
- Disparities in colonoscopy use
- Further research: reasons, incidence of CRC, appropriateness of existing guidelines for this population

Acknowledgments



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