The Prevalence of the Types of Polyps on Screening Colonoscopy:

A Five Year Cross-sectional Study

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THE PREVALENCE OF THE TYPES OF POLYPS ON SCREENING COLONOSCOPY:

A FIVE YEAR CROSS-SECTIONAL STUDY

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ABSTRACT

Significance:

This is the first study in the Philippines to determine the prevalence of histologic types of polyps on screening colonoscopy. This data can guide physicians in colorectal cancer screening.

Methodology:

This is a 5 year cross-sectional study of all completed screening colonoscopies done in a tertiary institution. Cases with polyps with no histopathologic diagnosis were excluded. Prevalence of the type of polyp per location per sex was computed using SPSS. Comparison of the prevalence of the different histopathologic types of colonic polyps by colon localization was analyzed using the calculated 95% confidence interval by Epi Info. Level of significance was set at alpha = 0.05.

Results:

In 3608 completed screening colonoscopies, 1253 of cases (34.7%) had polyps. The prevalence of polyps in male is higher (40.3% vs. 30.2%). Overall prevalence of hyperplastic polyps, tubular adenoma and tubulovillous adenoma are 17.7% (CI 16.4% – 19.0%), 20.1% (CI 18.8% - 21.5%) and 1.3% (1.0% - 1.78%), respectively. In all types of polyps, the prevalence was highest in the left colon as follows: hyperplastic 10.8% (CI 9.8% - 11.9%), tubular adenoma 13.1% (CI 12.1% - 14.3%), and tubulovillous adenoma 0.8% (CI 0.6% - 1.2%). Six cases of adenocarcinoma were likewise detected. The highest prevalence of polyps occurred in the group aged 50 to 75 years old.

Conclusion:

Tubular adenomas are the predominant histologic type and majority are in the left colon, as in the West and in Southern Indian population. However, 11% of cases with polyps occurred in the right and transverse colon.

Keywords: Cross-sectional, screening colonoscopy, colon polyps, prevalence

INTRODUCTION

Colorectal cancer (CRC) can be prevented by screening, and early diagnosis affords cure. However, it still ranks second as the most common cancer in women and third most common cancer in men worldwide in 2012.[1] On its pre-malignant and early stage, majority of patients are asymptomatic. Screening enable early identification of polyps which could progress to cancer, yet not all people at risk for CRC undergo screening for a variety of reason – lack of knowledge, unavailability of screening tests, fear, expense, to name a few. Hence this study investigates the incidence of different histologic types of polyps based on colonic location and gender among patients who underwent screening colonoscopy. This will give our patients and clinicians an accurate data to help in making an informed choice on colorectal cancer screening.

This is the first study in our country to determine the prevalence of different histologic types of polyps detected on screening colonoscopy and stratify base on sex and colonic location. Results of this study can be used to objectively explain the benefit of colorectal cancer screening to our patients in terms of identifying polyps which could lead to cancer. Knowledge of colonic location of these polyps will guide physicians in recommending fibersigmoidoscopy versus colonoscopy as a screening tool for CRC to our patients.

BACKGROUND INFORMATION AND BRIEF LITERATURE REVIEW

Most colorectal cancers arise from adenomas, majority of which are polyps that progress in size, develop dysplasia and lead to cancer.[2] When progression of polyps to malignant tumors occurs, it takes at least a decade on average.[3] Polyps and cancers are distributed approximately evenly throughout the colon and rectum but tend to be more proximal in women and with increasing age. In southern Indian adults, most colonic polyps are adenomatous and are in the left colon. Large polyps are associated with severe dysplasia.[4] In recent studies, it has been observed that there is an increasing trend toward right-sided colon cancers with the greatest increase in the cecum.[5, 6, 7]

About two-thirds of all colonic polyps are adenomas. Adenomas are dysplastic and thus have malignant potential. Even if most colorectal cancers arise from adenomas, only a small minority of adenomas progress to cancer (5 percent or less). Studies reporting the average age at presentation of patients with adenomatous polyps versus colorectal cancer suggest the time for development of adenomas to cancer is about 7 to 10 years.[8] Majority of small polyps exhibit minimal growth (averaging 0.5 mm/year) yet prospective observations suggest that complete regression is uncommon.[9] Hence the removal of colonic adenomas is important for minimizing cancer risk and mortality. This is supported by the decrease in the incidence of colorectal cancer in the United States with the introduction of widespread screening.[10] In addition, a National Polyp Study found that during a 23 year follow-up, patients who had adenomas removed had an estimated 53% reduction in mortality due to colon cancer compared with the expected number of deaths in the general population (standardized incidence-based mortality ratio 0.47, 95% CI 0.26-0.80).[11]

From May 1988 to May 1990, a prospective autopsy study was performed in 416 patients, mean age of 47 years, who died at the Philippine General Hospital in Manila, Philippines. Six of the 416 patients (1.4 percent) were found to have polyps. One patient had an inflammatory polyp, one was diagnosed with familial adenomatous polyposis, and one had an associated cecal carcinoma. Five "sporadic" adenomatous polyps were found in the remaining three patients (prevalence rate, 0.7%). All of the adenomatous polyps were located distal to the hepatic flexure.[12] Based on a review of pathology reports of all patients who underwent operation for colorectal cancer at the Philippine General Hospital over a period of 7 years, involving 1,277 patients, the site of cancer in order of frequency was rectum (49.8%), left colon (27.9%), and right colon (21.4%). Cancers of the right colon were more common in women, and rectal cancers were more frequent in men.[13] Based from the Colorectal Cancer Databank of St. Luke's Medical Center , Quezon City (SLMC QC), out of 393 Filipino patients who underwent surgery for colorectal cancer: 90% were aged more than 40 years old; 53% were male; 72% occurred at the left colon, mainly in the sigmoid (32.1%).[14]

Screening provides benefit because removal of premalignant adenomas can prevent CRC and removal of localized cancer may prevent CRC-related death. A study regarding trends in CRC incidence and screening rates in the United States of America (USA) showed approximately 250,000 to 500,000 CRC cases may have been prevented from 1987 to 2010, along with a shift from late- to early-stage disease.[15]. With the benefit of screening for CRC, in the USA in 2012, 65.1% of adults between ages 50 to 75 years underwent CRC screening.[16] The 2016 updated US Preventive Services Task Force (USPSTF) guidelines for CRC screening advised that patients should be offered a choice of screening modalities. Physicians must guide his patient in making an informed decision on which screening strategy would best fit him.[17] Among the choices for screening for CRC are fibersigmoidoscopy and colonoscopy. The flexible sigmoidoscope can reach to the splenic flexure (60 cm level) and thus can identify only left- sided colon lesions. One

study demonstrated that 66% of advanced colon lesions in men could be detected with sigmoidoscopy.[18] A study in 1463 women found that only 35% of women with advanced neoplasia would have had their lesions identified if they had undergone flexible sigmoidoscopy alone. Colon lesions are more likely to be right-sided (proximal) in women[13]. If colonoscopy is performed to follow-up polyps found on sigmoidoscopy, an additional 20 percent of neoplasms might be found, but lesions that were only present in the right colon would still be missed.[19]

This study aims to determine the prevalence of the different histopathologic types of polyps based on sex and colonic location among the screening colonoscopy done in a tertiary hospital in our country.

OBJECTIVE:

To compare the prevalence of the different histopathologic types of polyps based on sex and colonic localization among patients who underwent screening colonoscopy at SLMC QC from September 2011 to August 2016.

METHODOLOGY:

This is a cross-sectional study involving all completed screening colonoscopies done at St. Luke's Medical Center (SLMC), Quezon City (QC) from September 2011 to August 2016. If a polyp or mass if found, a histopathologic examination is warranted to be included in the study (Table 1). List and results of above procedures were taken from the Colonoscopy Databank of the Institute of Digestive and Liver Diseases (IDLD).

Prevalence of the histologic type of polyp per location per sex among patients who underwent screening colonoscopy will be computed. Sample size was calculated based on the comparison of the prevalence of colonic polyps among males and females. Assuming that prevalence of polyps among males is 34% and among females, 20.5%[21], with an alpha error of 5%, power of 95%, and a one-tailed alternative hypothesis, sample size calculated is 232 per group or 464 for two groups. Determination of the overall prevalence of colonic polyps and of the different histopathologic types for each location was analyzed using proportion or percentage. Ninety-five percent confidence interval (CI) of the prevalence was likewise calculated. Comparison of the prevalence of the different histopathologic types of colonic polyps by colon localization was analyzed using the calculated 95% confidence interval. A stratified analysis using sex as the stratification variable was also calculated. Level of significance will be set at alpha = 0.05. SPSS version 20 and Epi Info version 7 were used for the calculation.

DEFINITION OF TERMS

Complete colonoscopy – passing the colonoscope from the anus to the cecum; or, able to intubate the cecum. [20]

The location in the colon will be divided as follows:

1. Right Colon – colonic segment between the appendicular opening until the shadow of the liver, also called the hepatic flexure
2. Transverse Colon – colonic segment between the shadow of the liver (hepatic flexure) and the shadow of the spleen (splenic flexure)
3. Left Colon – colonic segment between the splenic flexure and the rectosigmoid junction
4. Rectum – segment distal to the rectosigmoid junction

Among the patients included in the study with finding of colonic polyp or polyps, histopathology result will be retrieved from the hospital record and tabulated. The polyps will be grouped to the following histopathologic types: hyperplastic polyp, tubular adenoma, tubulovillous adenoma. In case the histopathologic type of polyp doesn't belong to the above three groups, they will be classified as others. This study has been approved by the Institutional Scientific Review Committee (ISRC) of our institution.

ETHICAL CONSIDERATIONS

Confidentiality was maintained at all times. Each enrolled patient was given a code used in the data collection form which is only known to the authors. The statistician who calculated the results was blinded to the patient's identification and results.

RESULTS

There were a total of 3608 screening colonoscopies done from September 1, 2011 to August 31, 2016 included in the study out of 14,277 total colonoscopies performed for any indication (Figure 1). Majority of the patients included in the study were females (n = 1994, 55.3%). Mean age of the population is 56.4 years, (SD 9.43). Mean age of each sex is not statistically significant (p = 0.746). The included patients were grouped into three by age as follows: less than 50 years old, 50 to 75 years old, and greater than 75 years old (Table 2). Comparison among groups using Pearson Chi-Square tests showed chi-square of 46.235, df 2 and p value <0.001). Overall, among patients included in the study, those in the 50-75 year old group has the highest prevalence of polyps at 28.9% (n=1043) (Table 2).

Out of the 3608 screening colonoscopies included in the study, 1253 (34.7%) were found to have polyps. The prevalence of polyps in male is higher compared to females (40.3% vs. 30.2%). As seen on Table 3, screening colonoscopy was able to detect hyperplastic polyp in 637 of the cases (17.7%), tubular adenoma in 725 of the cases (20.1%), and tubulovillous adenoma in 48 of the cases (1.3%). Other polyps in 91 (2.5%) of the cases comprised of inflammatory polyps (56), retention polyps (3), mucosal polyps (5), peutz jeghers polyps (14), sessile serrated polyp (10), hamartomatous polyp (2), and villous adenoma (1). There were noted colonic mass which on histopathology revealed one ascending colon adenocarcinoma and one sigmoid adenocarcinoma; and a one case of rectosigmoid polyp which showed adenocarcinoma on biopsy. It was also noted that three screening colonoscopies were not completed due to two cases of a sigmoid mass and a case of a splenic flexure mass which all showed adenocarcinoma on histopathology.

Six hundred thirty-seven cases had hyperplastic polyps. Based on location (Table 4), the prevalence of hyperplastic polyps are as follows: right, 2.3% (n=82), transverse 1.3% (n=47), left 10.8% (n=389) and rectum 6.2% (n=223). Its prevalence in males is higher compared to females (20.6% vs. 15.3%, p<0.001) in all locations. On the right side, the prevalence of hyperplastic polyps in males is higher compared to females (2.9% vs. 1.8%, p=0.036). On the transverse colon, the prevalence of hyperplastic polyps in males is higher compared to females (1.6% vs. 1.1%, p=0.142). On the left side, the prevalence of hyperplastic polyps in males is higher compared to females (12.9% vs. 9.1%, p<0.001). On the rectum, the prevalence of hyperplastic polyps in males is higher compared to females (6.8% vs. 5.7%, p=0.199). There is no overlap on the 95% confidence interval of hyperplastic polyps in the different locations hence, the difference in prevalence per location is significant.

Tubular adenomas were the most common histopathological finding at seven hundred twenty-five cases. Most common location is the left colon with a prevalence of 13.1% (n=474). Based on location (Table 4), the prevalence of tubular adenoma are as follows: right, 5.0% (n=180), transverse 3.1% (n=111), and rectum 2.5% (n=92). Its prevalence in males is higher compared to females (24.3% vs. 16.6%, p<0.001). On all colonic locations, the prevalence of tubular adenoma in males is higher compared to females (right: 6.2% vs. 4.0%, p=0.003; transverse: 4.3% vs. 2.1%, p<0.001; left: 16.2% vs. 10.7%, p<0.001; rectum: 2.8% vs. 2.4%, p=0.414). Based on the 95% confidence interval, there is an overlap on the prevalence of tubular adenoma in the transverse colon.

Forty-eight cases had tubulovillous adenoma. Based on location (Table 4), the prevalence of tubulovillous adenoma are as follows: right, 0.1% (n=5), transverse 0.1% (n=4), left 0.8% (n=29) and rectum 0.3% (n=10). Its prevalence in males is higher compared to females (1.9% vs. 0.9%, p=0.840) in all locations. On the right side, the prevalence of tubulovillous adenoma in males is

higher compared to females (0.2% vs. 0.1%, p=0.112). On the transverse colon, the prevalence of tubulovillous adenoma in males is higher compared to females (0.2% vs. 0.1%, p=0.223). On the left side, the prevalence of tubulovillous adenoma in males is higher compared to females (1.2% vs. 0.5%, p=0.008). On the rectum, the prevalence of tubulovillous adenoma in males is higher compared to females (0.2% vs. 0.3%, p=0.763). There is an overlap on the 95% confidence interval on the prevalence of tubulovillous adenoma in the right and transverse colon and the rectum however no overlap was seen on the 95% confidence interval with the prevalence of tubulovillous adenoma on the left colon.

By grouping by age and histopathology (Table 5), prevalence was highest among patients more than 75 years old with tubular adenoma at 31.6% (p=<0.001).

DISCUSSION

At least one polyp was detected on 34.7% of screening colonoscopies included in the study. At least one polyp that has a potential to become cancer was detected on 21% of the screening colonoscopies included in the study. Removal of adenomatous polyps can prevent cancer. The National Polyp Study followed 1418 patients in whom colonoscopic examination led to the removal of one or more polyps. During a mean follow-up of six years, the incidence of colon cancer was 88 to 90% lower than in patients reported in other studies who had polyps that were not removed and 76% lower than in the general population.[22] Hence, guidelines by different societies such as the US Preventive Services Task Force (USPSTF) [17] in 2016, joint guidelines from the American Cancer Society (ACS), the United States Multi-Society Task Force on Colorectal Cancer (MSTF), and the American College of Radiology (ACR) in 2008, the American College of Gastroenterology (ACG)[23] in 2009, the National Comprehensive Cancer Network (NCCN)[24] in 2013 and the American College of Physicians (ACP)[25] in 2015, identified evidence based screening tests for colon cancer which includes fibersigmoidoscopy and colonoscopy. Also noted is the 2016 Canadian Task Force on Preventive Health Care which recommends screening adults aged 50 to 74 years with FOBT every two years or flexible sigmoidoscopy every 10 years instead of colonoscopy.[26] A number of studies were done in different countries to study the types of polyps seen on screening colonoscopy. Adenomatous polyps were the predominant type of polyp in Iran and India.[27,28] Among adenomatous polyps, tubular adenoma is the predominant subtype in Western countries.[11,15] However, a retrospective study in Thailand showed most polyps were hyperplastic.[29]

The highest prevalence (28.9%) of polyps occurred in the group aged 50 to 75 years old (n=1043) which was compatible with previous studies.[8,11,21] Screening for colon cancer for average risk individuals by colonoscopy covers this age group.[23] Results prove that colonoscopy

for this age group is high yield. The prevalence of included patients older than 75 years old with polyps is 1.2% (n=43). Hence screening colonoscopy for these patients is not recommended since the risks may outweigh its benefit. Among included patients less than 50 years old, prevalence of polyps is 4.6% (n=167). Further studies regarding the types of polyps detected per colonic location during screening colonoscopies among those less than 50 years old[23] is recommended to further strengthen evidence regarding the benefit of colonoscopy over fibersigmoidoscopy on this age group.

Both fibersigmoidoscopy and colonoscopy aim to detect polyps at risk of becoming malignant and remove them prior to developing into cancer. In our study, among included patients undergoing screening colonoscopy, most colonic polyps are tubular adenoma and are in the left colon in both sexes. This is compatible with a study of colon polyps in Southern Indian population in 2007.[4] This location is reachable via fibersigmoidoscopy. Five out of six cases of adenocarcinoma were also within the reach of fibersigmoidoscopy. Fibersigmoidoscopy compared to colonoscopy is faster, usually not requires sedation or bowel preparation and has a lower cost. However, 11% of polyps (n=429) occurred in the right and transverse colon. Two hundred and ninety-one cases of tubular adenoma and nine cases of tubulovillous adenoma were also detected at the right and transverse colon, locations which are beyond the reach of fibersigmoidoscopy. Hence, doing fibersigmoidoscopy instead of colonoscopy as a screening tool may miss 11% of polyps that may have capacity to develop into cancer.

Among the strengths of this study is the population is from a large volume tertiary institution and there is no statistically significant difference in age in both sexes. This study would be able to objectively provide data to our local physicians as well as our patients regarding the correlation of the prevalence of polyps based on gender and location. This data suggests to prioritize colonoscopy rather than fibersigmoidoscopy for colon cancer screening. However,

among patients less than 50 years of age, further studies regarding on the type of polyp per colonic location is still necessary to further strengthen the above suggestion. Current guidelines indicate follow-up colonoscopy if ever a polyp is detected on fibersigmoidoscopy because of the high incidence of synchronous lesion. Correlation of occurrence of left sided and rectal polyps with presence of right sided and transverse colon polyps are beyond the scope of the study but is warranted to further provide local data to guide physicians in deciding the primary choice of screening method for colon cancer. Due to large sample size, the difference on comparison were statistically significant but not necessarily clinically significant. However, due to the gravity of developing cancer, any possible missed lesion is important and must be taken into consideration.

CONCLUSION

Based on a five-year study of completed screening colonoscopies in a tertiary institution, tubular adenoma is the predominant histologic type of polyps and are usually located in the left colon, as in the West and in Southern Indian population. In all histologic types of polyps, the left colon which is readily reachable by fibersigmoidoscopy has the highest prevalence. However, 11% of cases with polyps occurred in the right and transverse colon which can only be examined by colonoscopy. The highest prevalence of polyps occurred in the group aged 50 to 75 years old which is the age group where screening colonoscopy for average risk individuals is recommended.

REFERENCES

1. Centers for Disease Control and Prevention Global Cancer Statistics. http://www.cdc.gov/cancer/international/statistics.htm. Accessed Sept 7, 2016.
2. Fearon ER, Vogelstein B. A genetic model for colorectal tumorigenesis. *Cell*. 1990;61(5):759.
3. Winawer SJ, et al. Colorectal cancer screening: clinical guidelines and rationale. *Gastroenterology*. 1997;112(2):594.
4. Jose Tony, et al. Profile of colonic polyps in a southern Indian population. *Indian J Gastroenterol* 2007;26:127-129.
5. Troisi RJ, Freedman AN, Devesa SS. Incidence of colorectal carcinoma in the U.S.: an update of trends by gender, race, age, subsite, and stage, 1975-1994. *Cancer*. 1999; 85:1670.
6. Cheng L, et al. Trends in colorectal cancer incidence by anatomic site and disease stage in the United States from 1976 to 2005. *Am J Clin Oncol.* 2011; 34:573.
7. Vukasin AP, et al. Increasing Incidence of Cecal and Sigmoid carcinoma. Data from the Connecticut Tumor Registry. *Cancer*. 1990; 66:2442.
8. Heitman SJ, Ronksley PE, Hilsden RJ, et al. Prevalence of adenomas and colorectal cancer in average risk individuals: a systematic review and meta-analysis. *Clin Gastroenterol Hepatol.* 2009; 7:1272.
9. Bersentes K, et al. Lack of spontaneous regression of tubular adenomas in two years of follow-up. *Am J Gastroenterol.* 1997; 92:1117.
10. Jemal A, et al. Annual Report to the Nation on the Status of Cancer, 1975-2009, featuring the burden and trends in human papillomavirus(HPV)-associated cancers and HPV vaccination coverage levels. *J Natl Cancer Ins.t* 2013; 105:175.

11. Ann G. Zauber, et al. Colonoscopic Polypectomy and Long-Term Prevention of Colorectal-Cancer Deaths . *N Engl J Med.* 2012;366:687-96.
12. Cajucom CC, et al. Prevalence of colorectal polyps in Filipinos. An autopsy study. *Dis Colon Rectum*. 1992 Jul;35(7):676-80.
13. Kaw LL Jr, et al. *Surgical pathology of colorectal cancer in Filipinos: implications for clinical practice*. J Am Coll Surg. 2002 Aug;195(2):188-95.
14. Colorectal Cancer Databank, St. Luke's Medical Center, Quezon City, Philippines, 1998-2014, unpublished.
15. Yang DX, et al. Estimating the magnitude of colorectal cancers prevented during the era of screening: 1976 to 2009. *Cancer*. 2014;120(18):2893.
16. Centers for Disease Control and Prevention (CDC). Vital signs: colorectal cancer screening test use--United States, 2012. *MMWR Morb Mortal Wkly Rep* 2013; 62:881.
17. US Preventive Services Task Force, Bibbins-Domingo K, et al. Screening for Colorectal Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2016 Jun;315(23):2564-75.
18. Lieberman DA, Weiss DG, Veterans Affairs Cooperative Study Group 380. One-time screening for colorectal cancer with combined fecal occult-blood testing and examination of the distal colon. *N Engl J Med*. 2001; 345:555.
19. Schoenfeld P, Cash B, Flood A, et al. Colonoscopic screening of average-risk women for colorectal neoplasia. *N Engl J Med* 2005; 352:2061.
20. De Lusong, Mark Anthony and Val Neri. *Handbook of Endoscopy*, 1st ed. C & E Publishing, Inc, 2015.
21. Corley, Douglas, et al. Variation of Adenoma Prevalence by Age, Sex, Race, and Colon Location in a Large Population: Implications for Screening and Quality Programs. *Clin Gastroenterol Hepatol*. 2013 February ; 11(2): 172–180.

22. Winawer SJ, et al. Prevention of colorectal cancer by colonoscopic polypectomy. The National Polyp Study Workgroup. *N Engl J Med*. 1993;329(27):1977.
23. Rex DK, et al. American College of Gastroenterology guidelines for colorectal cancer screening 2009. *Am J Gastroenterol*. 2009;104(3):739.
24. Burt RW, et al. Colorectal cancer screening. J Natl Compr Canc Netw. 2013;11(12):1538.
25. Wilt TJ, Harris RP, Qaseem A, High Value Care Task Force of the American College of Physicians. Screening for cancer: advice for high-value care from the American College of Physicians. *Ann Intern Med*. 2015;162(10):718.
26. Canadian Task Force on Preventive Health Care, Bacchus CM, et al. Recommendations on screening for colorectal cancer in primary care. *CMAJ*. 2016;188(5):340.
27. Bafandeh Y, Daghestani D, Esmaili H. Demographic and anatomical survey of colorectal polyps in an Iranian population. *Asian Pac J Cancer Prev.* 2005;6:537-40.
28. Jose, Tony, et al. Profile of colonic polyps in a southern Indian population. *Indian Journal of Gastroenterology*. 2007; Vol 26 May – June.
29. Wisedopas N, Thirabanjasak D, Taweevisit M. A retrospective study of colonic polyps in King Chulalongkorn Memorial Hospital. *J Med Assoc Thai.* 2005;88(Suppl 4):S36-S41.

FIGURES AND TABLES

Figure 1. Inclusion and Exclusion Criteria

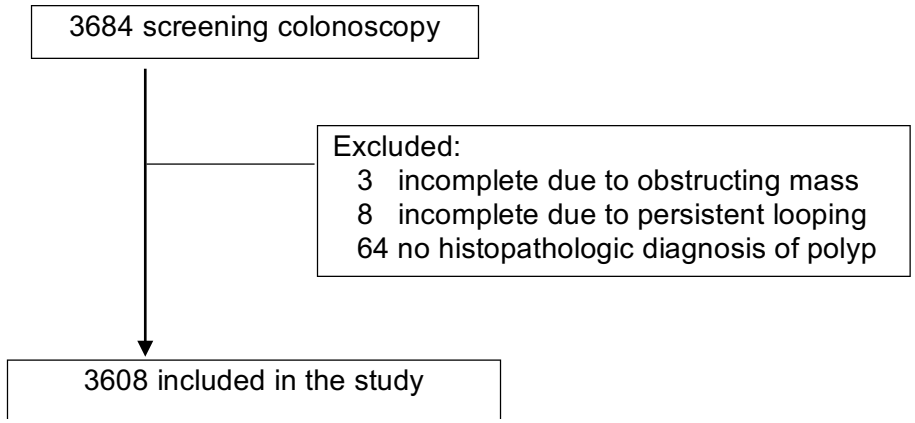

Table 1. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
- Screening Colonoscopy at SLMC QC - Complete colonoscopy	- Colonoscopy done for other indication rather than screening - Incomplete colonoscopy - No histopathologic diagnosis of colonic polyp

Table 2. Prevalence of polyps per age group.

Age	Total Patients	Total Patients with Polyp	Prevalence per age group	Overall Prevalence
Less than 50 years old	695	167	24%	4.6%
50 – 75 years old	2818	1043	37%	28.9%
Greater than 75 years old	95	43	45.3%	1.2%

Table 3. Prevalence of colon polyps based on histopathology

Colonic Polyp	Male		Female		Overall Prevalence (95% CI)	P value
	Total No.	Prevalence	Total No.	Prevalence		
Hyperplastic Polyp	332	20.6%	305	15.3%	17.7% (16.4% – 19.0%)	<0.001
Tubular Adenoma	393	24.3%	332	16.6%	20.1% (18.8% - 21.5%)	<0.001
Tubulo-villous Adenoma	31	1.9%	17	0.9%	1.3% (1.0% - 1.78%)	0.005

Table 4. Prevalence of colon polyps based on histopathology and location

Colonic Polyp Histopathology and Location		Male		Female		Overall Prevalence (95% CI)
		Total No.	Prevalence	Total No.	Prevalence	
Hyperplastic	Right	46	2.9%	36	1.8%	2.3% (1.8% - 2.8%)
	Transverse	26	1.6%	21	1.1%	1.3% (1.0% – 1.7%)
	Left	208	12.9%	181	9.1%	10.8% (9.8% - 11.9%)
	Rectal	109	6.8%	114	5.7%	6.2% (5.4% - 7.0%)
Tubular Adenoma	Right	100	6.2%	80	4.0%	5.0% (4.3% - 5.8%)
	Transverse	69	4.3%	42	2.1%	3.1% (2.6% - 3.7%)
	Left	261	16.2%	213	10.7%	13.1% (12.1% - 14.3%)
	Rectal	45	2.8%	47	2.4%	2.5% (2.1% - 3.1%)
Tubulovillous Adenoma	Right	4	0.2%	1	0.1%	0.1% (0.1% - 0.3%)
	Transverse	3	0.2%	1	0.1%	0.1% (0.0% - 0.3%)
	Left	20	1.2%	9	0.5%	0.8% (0.6% - 1.2%)
	Rectal	4	0.2%	6	0.3%	0.3% (0.1% - 0.5%)

Table 5. Prevalence of colon polyps based on histopathology and age

Colonic Polyp	Age Group						P value
	Less than 50 years old		50 – 75 years old		More than 75 years old		
	Total No.	Prevalence	Total No.	Prevalence	Total No.	Prevalence	
Hyperplastic	90	12.9%	534	18.9%	13	13.7%	0.001
Tubular Adenoma	84	12.1%	611	21.7%	30	31.6%	<0.001
Tubulovillous Adenoma	5	0.7%	41	1.5%	2	2.1%	0.254