Age of Colon Cancer Screening – A Retrospective Review

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Abstract

Colon cancer is the third most common cause of cancer-related death in the U.S. In 2019, the American Cancer Society predicted that 101,420 people in the U.S. would receive a new diagnosis of colon cancer. Due to this high prevalence, there has been a recent debate about the appropriate age to start colon cancer screening. Currently, the American Society of Gastroenterology recommends that screening start for average risk individuals at the age of 50 [1]. Conversely, the American Cancer Society has recently recommended that colon cancer screening for average risk individuals begin at the age of 45 [2]. The aim of our study is to determine if there is any difference in precancerous polyp detection rate in average risk patients undergoing screening colonoscopy at age 50 versus between the ages of 45 and 49. We examined 200 at risk individuals who underwent screening colonoscopy at Digestive Disease Center of CNY, an outpatient endoscopy center. Out of these 200 patients, 52 of them were found to have precancerous polyps. Our results indicated no significant difference in incidence of precancerous polyps between the two age groups (p=.1702). Our results indicate that there is evidence for the screening age to be lowered to below the age of 50.

Purpose

Colon cancer is becoming more prevalent in individuals younger than the age of 50. Due to this, there has been a recent debate about the appropriate age to start colon cancer screening. The American Cancer Society has recently recommended that the initial screening age for average risk individuals for colon cancer be lowered to 45. The American Society of Gastroenterology, however, still recommends the original screening age of 50 years old. This discrepancy in recommendations has many important implications, including population-based utilization of resources, discussions between providers and patients about the risks and benefits of procedures and insurance coverage.

Methods

We first examined 200 at risk individuals who had a screening colonoscopy take place within the last year at Digestive Disease Center of CNY, an outpatient endoscopy center.

Information was then collected regarding the number and size of polyps extracted during the procedure, and the pathology of those resulting polyps. Other miscellaneous information was collected alongside this information for supplemental purposes, such as BMI and medical conditions of the individual. For example, amount of alcohol consumed by the individual daily.

Results

Out of these 200 patients, 52 of them were found to have precancerous polyps. 34 of the 52 patients that were found to have precancerous polyps were 50 years old at the time of scoping. Average age of the patients scoped was 48.86 years old. We first made a boxplot to examine the distribution of patients and their number of polyps. (Figure 1) We then performed a 2-sample t-test, while removing an outlier of 15 precancerous polyps removed from a patient in group 2, to avoid skewing the data. The result of this t-test showed that there was no significant difference in the incidence of precancerous polyps among the two age groups (p=0.1702). To confirm our results we performed a one-sample t-test twice to determine if the values had a significant difference from 0. A one-sample t-test of the group of patients aged 50 had a significant difference with respect to 0 (p=1.044e-09). Another one-sample t-test of the group of patients below the age of 50 was performed. This test also showed that there was a significant difference with respect to 0 (p=4.795e-05).

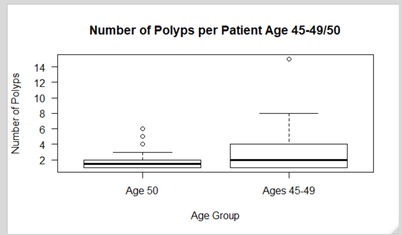

Figure 1: Plot of the number of precancerous polyps removed from those age 50, compared to those age 45-49

Conclusion

Our results indicate that there is sufficient evidence showing that the screening age should be lowered to below the age of 50, as there is no significant difference in the incidence of precancerous polyps among patients screened at the age of 50 and those screened at ages below 50.

Bibliography

1. Rex DK, Johnson DA, Anderson JC, Schoenfeld PS, Burke CA, Inadomi JM. American College of Gastroenterology guidelines for colorectal cancer screening 2009 [corrected]. *Am J Gastroenterol.* 2009;**104**:739-750.
2. Wolf AM, Fontham ET, Church TR, et al. Colorectal cancer screening for average risk adults: 2018 guideline update from the American Cancer Society. *CA: Cancer J Clin*. 2018 [Epub ahead of print].