

Obesity is a risk factor for colon cancer

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Abstract

Background & Aim: Obesity is becoming a world public health problem, which is related to an increased risk of cancer. The aim of our study is to evaluate the relation between obesity and colon cancer through the detection of adenomatous polyps during colonoscopy. **Methodology:** All patients that underwent total colonoscopy for a variety of reasons were prospectively evaluated in a one year period. Parameters evaluated were BMI, age, number and type of polyps detected. BMI >24.9 and >29.9 were considered overweight and obese respectively. Patients with and without detected polyps were compared in terms of BMI. Statistical analysis was performed with Instant program, using Fisher's exact test. **Results:** 120 patients of a mean age of 60 (territory 20-87) years entered our examination, being 58 female and 42 male. Mean BMI was 25.7. 46.6% of the patients were overweight or obese (overweight n=36/obese n=20) 84 of the 120 patients had polyps (70%): in obese patients 19/20 (95%) had polyps (16 adenomatous) and in overweight group 27/36 (75%) had polyps (21 adenomatous). The comparison between the obese and overweight group with the group with normal BMI was statistically significant ($p < 0.0001$ and $p < 0.0002$, respectively). **Conclusions:** Patients with overweight or obesity have an increased risk of colon cancer, if we consider the number of adenomatous polyps detected. Colonoscopy is an important tool for prevention of colon cancer in this population.

Introduction

Colorectal cancer (CRC) is a major public health concern, as it is one of the leading causes of cancer deaths in the Western world. Although the high incidence rate of CRC is observed in developed countries, its incidence rate has been rapidly increasing in developing countries over the last few decades. To explore the effective tools for the prevention of CRC, great investment has been made to gain new insight into how environmental factors influence the development of CRC. Several environmental risk factors, such

As smoking, obesity, a high-fat/low-fiber diet or physical inactivity, have been suggested for CRC development. The prevalence of overweight and obesity is increasing dramatically in most parts of the world, and can lead to obesity-related cancers, including postmenopausal breast cancer, colorectal, endometrial, esophagus, kidney, lung, pancreatic, thyroid, and gallbladder cancers. However, the association between obesity and CRC is controversial. In contrast with general obesity, body fat distribution—particularly abdominal obesity—appears to play a role in the development of CRC. This positive association of WC or WHR with CRC remained even after adjustment for body mass index (BMI).

The risk of CRC in obese individuals, especially those with higher abdominal obesity has not been fully quantified, and it is also unclear whether abdominal obesity is an independent risk factor of CRC. Therefore, a comprehensive systematic review and meta-analysis of prospective studies was performed to estimate the risk of CRC associated with abdominal obesity. In addition to their associations with greater incidence of cancer, overweight and obesity increase the risk of death for patients with most of the malignancies listed above, as well as for patients with premenopausal breast cancer and squamous cell oral tongue cancer. In the United States, the impact of overweight and obesity has been estimated to account for 14% of cancer deaths in men and 20% of cancer deaths in women. In addition to its pathophysiologic effects on tumor growth; obesity complicates management of patients with cancer further by making it more difficult to determine correct doses for chemotherapy. In contrast, maintaining normal weight at a BMI < 25 kg/m² is projected to prevent 90,000 cancer deaths per year in the United States. The association of obesity with cancer and the potential role of intentional weight loss in preventing cancer incidence and mortality have been demonstrated in two major bariatric surgery studies. In the Swedish Obese Subjects (SOS) Study, over 4,000 obese patients (BMI ≥ 34 kg/m²) were enrolled prospectively in a comparison of 2010 bariatric surgery patients to 2036 controls. During a median follow-up of 10.9 years (range 0–18.1 years) bariatric surgery was associated with a 40% reduction in cancer incidence. In a retrospective study, 7925 patients (BMI ≥ 35 kg/m²) who had undergone gastric bypass surgery in a single surgical practice in Utah were compared to 7925 matched controls

During a mean follow-up period of 7.1 years (18 years total) there was a 60% decrease in cancer mortality associated with bariatric surgery.²⁷ Both groups were predominantly composed of women, 84% in the Utah study and 70% in the SOS study.^{25–27} Interestingly, the SOS study reported that the decreased incidence of cancer in association with bariatric surgery occurred in obese women but not in obese men.

These alarming statistics are of even greater concern for their impact on public health when one considers the following trends. First, the increased incidence of obesity in children and the likelihood that obese children will mature into obese adults means that more people will be exposed to the obesity-associated cancer-promoting conditions for longer periods in their lives, where increasing

evidence indicates that longer exposure is associated with greater risk for cancer incidence^{28,29} and cancer deaths.³⁰ Second, the aging or graying of the baby boomer population, those born between 1946 and 1964, is expected to significantly expand the population of older adults (i.e., those over 65 years of age) among whom cancer and obesity are more prevalent.^{4,31} Third, as noted above, the incidence of obesity and severe obesity in this population is projected to increase over the next two decades.^{4,32} Thus, we are facing a so-called “perfect storm” of public health trends with convergence of the obesity pandemic, expansion of the elderly population, and the graying of the baby boomers to an age where they are at greatest risk for cancer development.

Biography

Lucia Oliveira is a Director Anorectal Physiology Dept. of Rio de Janeiro and CEPAMED. She is a Colorectal Surgeon in Hospital Casa de Saude Sao Jose, Rio de Janeiro. She pursued her PhD in Colorectal Surgery – University of Sao Paulo. She is a Research Fellow of Cleveland Clinic Florida and International Fellow of American Society of Colon and Rectal Surgeons. She is likewise the Titular individual from Brazilian College of Surgeons and Brazilian Colorectal Society.