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Changes in body mass index and stoma related problems in the elderly☆,☆☆

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ABSTRACT

Objectives: Weight gain can cause retraction of an intestinal stoma, possibly resulting in difficulty with wafer and pouch fit, daily care challenges, and discomfort. This cross-sectional study examined the association between body mass index (BMI) and ostomy-related problems among long-term (>5 years post-diagnosis) colorectal cancer (CRC) survivors.

Materials and methods: CRC survivors from three Kaiser Permanente Regions completed a mailed survey. The response rate for those with an ostomy was 53% (283/529). Questions included stoma-related problems, and time to conduct daily ostomy care. Poisson regression evaluated associations between report of problems and change in BMI. Our analysis sample included 235 survivors.

Results: Sample was 76% ≥65 years of age. Since their surgeries, BMI remained stable (ST) in 44% (103), decreased (DE) in 20% (48), and increased (IN) in 36% (84). Compared to ST, male IN (RR 2.15 [1.09–4.25]) and female DE (RR 5.06 [1.26–25.0]) were more likely to spend more than 30 min per day on stoma care. IN (vs. ST) were more likely to report interference with clothing (RR 1.51 [1.06–2.17]) and other stoma-related problems (RR 2.32 [1.30–4.14]). Survivors who were obese at time of survey were more likely to report interference with clothing (RR 1.88 [1.38–2.56]) and other stoma-related problems (RR 1.68 [1.07–2.65]).

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Conclusion: A change in BMI is associated with ostomy-related problems among long-term CRC survivors. Equipment and care practices may need to be adapted for changes in abdominal shape. Health care providers should caution that a significant increase or decrease in BMI may cause ostomy-related problems.

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1. Introduction

During 2012, in the United States, an estimated 143,460 cases of colorectal cancer (CRC) will be diagnosed, and an estimated 51,690 deaths from CRC will occur.[1] Death rates in the US among CRC patients have been on the decline since 1975.[2] During surgery, a larger percentage of patients with rectal cancer now undergo an anastomosis; however, one out of eight survivors still must cope with the challenges of an intestinal stoma, or ostomy.[3]

Colorectal cancer risk increases with age; 91% of the diagnoses occur in individuals 50 years of age and older.[1] As ostomates age, many physiological changes occur that may adversely affect ostomy management. These changes may include: cognitive impairment, musculoskeletal changes, sensory deficits, digestive and metabolic changes, urogenital changes, skin changes, and changes in functional abilities. These changes may result in a loss of independence and ability to perform self-care. If no caregiver is available, or if caregivers refuse to perform ostomy care, health-related quality of life (HR-QOL) is likely to decline. Moreover, body habitus changes with aging — body weight, total body fat, and fat distribution increase, as subcutaneous fat decreases and visceral fat, especially on the trunk, increases.[4] These physiologic changes, alone or in combination may create stoma-related problems.

Moreover, some elders may experience greater psychological impacts as a result of receiving an ostomy, whereas others may respond with more resilience — the ability to maintain physical and psychological health in the face of risk or threats.[5,6] For example, it has been found that older female ostomates report poorer health status than younger women on average, and older male ostomates appear to have more difficulty with emotional adjustment after surgery when compared to older females with ostomies.[5] Through resilience, an individual can more readily recover from burdensome conditions, while those who are less resilient may experience more significant stoma-related problems.

In patients with CRC, an intestinal stoma (colostomy) is most commonly created during abdominal perineal resection, although there are other instances when an ostomy is necessary. In addition to HR-QOL issues[7–9] and numerous other challenges,[10,11] we have observed that many ostomates have multiple ostomy-related problems that may be a result of a change in body mass index (BMI). But until now, evidence of that association has been lacking. There are advantages to have an optimally-placed stoma at the time of surgery.[12] However, a change in BMI post-operatively may alter ostomy function and lead to difficulty with pouch placement and fit, fecal leakage, skin irritation, time-consuming self-care, or interference with clothing. Furthermore, some evidence suggests that ostomates should be counseled about weight gain and potential tension on the stoma that may lead to retraction,[13] possibly resulting in other challenges.

In a sample of long-term (≥5 years post-diagnosis) CRC survivors with an ostomy, we examined the association of a change in BMI after ostomy placement and subsequent stoma management problems.

2. Methods

This research was conducted within a non-profit integrated health care system that is a member of the Cancer Research Network: the Kaiser Permanente Hawai'i, Northern California, and Northwest regions, based in Honolulu, HI, Oakland, CA, and Portland, OR, respectively. The data coordinating center was located at the University of Arizona. Each of these systems provides comprehensive health services through closed-panel delivery models with salaried physicians. Other features of these systems include tumor registries, coverage of clinical preventive services, and integrated electronic medical record systems. Each organization provides private and public health insurance coverage, including Medicare Advantage and Medicaid risk contracts, resulting in diverse enrollments that generally represent their local communities. The study methods (including survey questions) are described in detail elsewhere.[14] Briefly, our study population consisted of Kaiser Permanente members in those three regions who were CRC survivors at least 5 years since diagnosis and had undergone surgical placement of an ostomy at least 2 years prior to the survey. We excluded survivors if their ostomy had been reversed or if they were undergoing cancer treatment at the time of survey. The survey response rate was 53% (283/529). Our final analysis included 235 survivors with complete data. Our study protocol and survey materials were approved by the institutional review boards at Kaiser Permanente Northern California, Kaiser Permanente Northwest, Kaiser Permanente Hawai'i, and the University of Arizona.

2.1. *Data Collection*

We obtained survivors' BMI from the modified City of Hope-HRQOL-Ostomy (mCOH-Ostomy) survey that they completed by mail. We noted (1) preoperative BMI (time of surgery); (2) current BMI (time of survey); and (3) change in BMI between those two time points. A change in BMI of <1.5 was deemed "stable," whereas a change of ≥1.5 in either direction was considered a clinically meaningful increase or decrease. BMI≥30 indicated obesity.

Outcome variables from the mCOH-Ostomy were: time spent per day on stoma care (≤ or >30 min), self-reported problems with clothing caused by ostomy location (yes/no), and any other problems related to ostomy location, including interference with