Nutritional Support During Preoperative Chemoradiotherapy for Rectal Cancer Prevents Significant Weight Loss

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INTRODUCTION

- Colorectal cancer (CRC) accounts for nearly 1 in 10 cancer deaths globally, ranking 3rd in incidence and 2nd in overall mortality (1).
- Weight loss during long course neoadjuvant and adjuvant chemoradiation (chemoRT) treatment of CRC is common.
- Up to 2/3 of patients undergoing CRT for locally advanced CRC experience some decrease in body mass index (BMI), with just over 10% of those experiencing severe losses, defined as >7% loss from baseline (2).
- Significant weight loss affects radiotherapy (RT) dose delivery, resulting in suboptimal disease coverage (3) and increased toxicity (4), and should be avoided whenever possible.
- Prevention of significant weight change is made even more important by the steep dose gradients between tumour and healthy tissue achievable via modern RT techniques (5).

METHODS

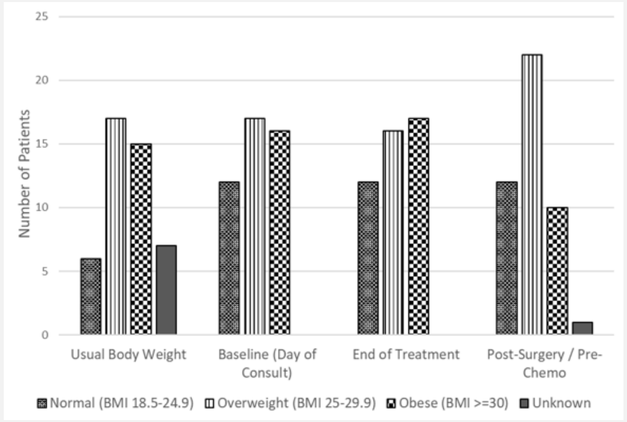
- We retrospectively reviewed patients treated in 2014 at our tertiary cancer centre in Edmonton, Canda.
- Patients received long-course preoperative RT with concurrent oral capecitabine (cape) or protracted venous infusion 5-FU, followed by resection.
- Patients were excluded if they:

a) did not have radical surgery
b) had an unplanned interruption in chemotherapy or radiotherapy lasting > 3 days
c) had a scheduled resimulation prior to treatment start
d) required hospitalization for treatment toxicity
e) did not complete the full course of chemoRT
f) developed metastatic disease after chemoRT completion but prior to surgical resection (per radiology/pathology).

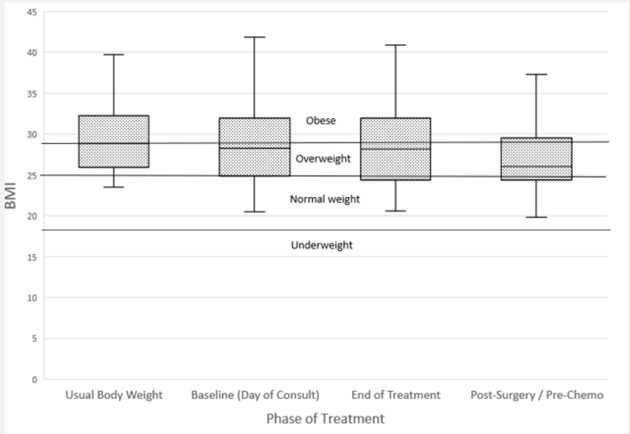
- Electronic medical records were reviewed including RT planning software, and demographic data, treatment schedules, and serial weights were abstracted, anonymized and analyzed.

RESULTS

- 45 patients (60% male, 100% adenocarcinoma) met inclusion criteria.
- 35/45 had clinical stage III disease.
- 10/45 required defunctioning ostomy prior to chemoRT start.
- 39/45 (86.7%) received concurrent cape.
- 54Gy/30 (22/45) and 50.4Gy/28 (17/45) were the most common radiotherapy schedules, 33/45 delivered via 3D conformal RT.



Figures 1A ⇧ & 1B ⇩ Body Mass Index distribution by phase of treatment.



RESULTS

- Based on usual body weight (UBW), 6/45 patients had normal BMI prior to diagnosis, 17/45 were overweight, 15/45 were obese and 7/45 were unknown.
- 18/45 had experienced an average weight loss of 9.7kg prior to oncology consult (range 1.8-22.7kg), representing a range of decline of 2.6-23.9% of UBW.
- 40/45 were assessed by a Registered Dietician an average of 3 times (range 1-6 visits) between oncology consult and completion of chemoRT.
- During chemoRT, 25/45 remained within +/-2% of baseline weight, 8/45 lost >2% and the remainder gained >2% (Figures 1-2).
- Only 1/45 lost >7% body weight.
- Between the end of chemoRT and the post-operative visit for discussion of adjuvant chemo, 32/45 experienced further decrease in weight, 20/32 of whom lost >7% relative to the last weight recorded during chemoRT.

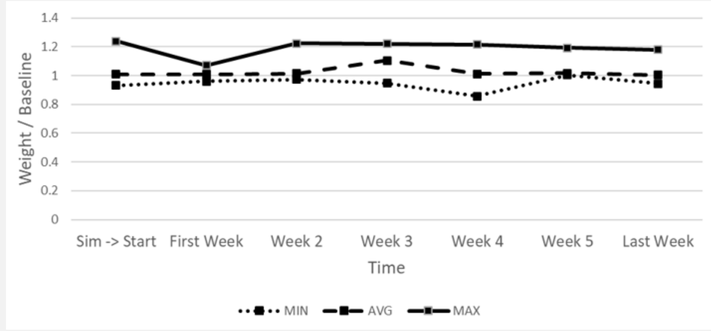


Figure 2. Change in Weight During Preoperative Chemoradiotherapy.

CONCLUSIONS

- Intensive nutritional support during preoperative chemoradiation for rectal cancer not only halts weight loss already experienced but prevents additional significant change during intensive combined modality therapy.

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