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Is BMI a Factor in Compliance to Adjuvant Chemotherapy for Locally Advanced Rectal Cancer? A multicenter retrospective analysis and comparison with non-obese patients

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Abstract
Background: Compliance to adjuvant chemotherapy (AC) for patients undergoing rectal surgery ranges from 43% to 73.6%. Reasons reported for not initiating or completing AC include onset of postoperative complications, drug toxicity, disease progression and/or patient preferences. Little is known regarding the impact of obesity on the compliance to AC in this setting.
Methods: This multicenter, retrospective study analyzed compliance to AC and treatment-related morbidity in 511 patients having undergone surgery with curative intent for rectal cancer in six Italian colorectal centers between January 2013 and December 2017.
Results: 70 patients were obese (BMI > 30 kg/m^2). The proportion of open procedures (22.9% vs. 13.4%) and conversions (14.3% vs. 4.8%) was greater in obese compared to non-obese patients ($p<0.001$). Median hospital stay was one day longer for obese patients (9 days vs. 10 days, $p=0.038$) while there was no statistically significant difference in the complication rate, whether overall (58.6% in obese vs. 52.3% in non-obese) or with a Clavien-Dindo score ≥ 3 (17.1% vs 10.9%). AC was offered to 49/70 (70%) patients in the obese group and 306/441 (69.4%) in the non-obese group ($p=0.43$). There was no statistically significant difference in AC compliance: 18.4% and 22.9% did not start AC, while 36.7% and 34.6%, started AC but did not complete the scheduled treatment ($p=0.79$) in the obese and non-obese group, respectively. Overall, 55% of patients who started AC successfully completed their adjuvant treatment.
Conclusions: Obesity did not impact compliance to AC for locally advanced rectal cancer: compliance was poor in obese and non-obese patients with no statistically significant difference between the two groups. Major complication rate was not statistically significantly affected by increased BMI.
Key words: rectal cancer, obesity, adjuvant chemotherapy