



# 2020 Annual Meeting

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MIDWEST SURGICAL ASSOCIATION

## 1. CLINICAL STAGING ACCURACY AND THE ROLE OF NEOADJUVANT CHEMORADIOTHERAPY FOR CT3N0 RECTAL CANCER: PROPENSITY SCORE MATCHED NATIONAL CANCER DATABASE ANALYSIS

Presenter: Dominykas Burneikis MD | Cleveland Clinic Foundation

D Burneikis, O Lavryk, M Kalady, S Steele

**Background:** While neoadjuvant chemoradiation therapy (nCRT) is largely accepted as standard of care for locally advanced rectal cancer, the approach to treatment of patients with clinically staged T3N0 disease has been increasingly debated. The trials that established this standard of care did not address the fact that the T3N0 subset of patients is considered lower risk for local recurrence, and thus the concern remains that nCRT may be an unnecessary adjunct to proper total mesorectal excision (TME). This study examines the accuracy of clinical staging for cT3N0 rectal cancer as recorded in the National Cancer Data Base (NCDB) and evaluates the role of nCRT in treating these patients.

**Methods:** Clinically staged T3N0M0 rectal cancer patients who received nCRT or proceeded to surgery first between 2004 and 2015 were included in the analysis. Total of 15,843 patient records were identified in the NCDB meeting inclusion criteria. Propensity score matching using the greedy nearest neighbor method was employed to balance the nCRT and surgery-first groups, resulting in 3665 matched pairs. Adjusted overall survival, pathological nodal upstaging and resection margin status were compared.

**Results:** Accuracy of clinical staging was poor, with 23% of cT3N0 patients undergoing surgery-first having pathologically positive nodes. Another 16% turned out to have < stage II disease on surgical pathology. The Kaplan-Meier curves for overall survival in matched nCRT and surgery-first groups demonstrated a survival advantage for cT3N0 patients treated with nCRT. 5-year survival for cT3N0 patients receiving nCRT was 71% compared to 65% for patients who proceeded to surgery first. Median overall survival was 9 and 7.8 years ( $p < 0.001$ ) for nCRT and surgery-first groups respectively.

**Conclusion:** Current clinical staging accuracy remains poor, and can result in both undertreatment and overtreatment of cT3N0 rectal cancer. While administering nCRT appears to confer a slight survival advantage over proceeding to surgery first, this strategy must be balanced with the fact that it likely results in overtreatment in ~16% of cases. Until clinical staging accuracy improves nationally, nCRT should remain the standard in treating cT3N0 rectal cancer.

Outcomes in Patients with cT3N0 Rectal Cancer Undergoing nCRT vs. Surgery First Approach

|                                | nCRT        | Surgery First | p      |
|--------------------------------|-------------|---------------|--------|
| Mean Days to Chemotherapy (sd) | 37 (24)     | 82 (65)       | <0.001 |
| Mean Days to Radiation (sd)    | 38 (25)     | 100 (89)      | <0.001 |
| Mean Days to Surgery (sd)      | 137 (46)    | 51 (61)       | <0.001 |
| Pathologic Stage (%)           |             |               | <0.001 |
| pStage 0                       | 136 (3.7)   | 47 (1.3)      |        |
| pStage I                       | 1209 (33.0) | 542 (14.8)    |        |
| pStage II                      | 1457 (39.8) | 2195 (59.9)   |        |
| pStage III                     | 808 (22.0)  | 833 (22.7)    |        |
| pStage IV                      | 55 (1.5)    | 48 (1.3)      |        |
| Nodes Examined (sd)            | 12.6 (7.8)  | 16.1 (9.8)    | <0.001 |
| Nodes Positive (sd)            | 0.6 (2.0)   | 0.9 (2.5)     | <0.001 |
| Tumor Size in mm (sd)          | 39 (31)     | 45 (29)       | <0.001 |
| R0 Margin (%)                  | 3439 (95.0) | 3378 (93.2)   | 0.017  |
| 90 Day Mortality (%)           | 86 (2.4)    | 138 (3.8)     | <0.001 |
| 5 Year Overall Survival        | 71%         | 65%           | <0.001 |
| Median Overall Survival        | 9.0 years   | 7.8 years     | <0.001 |