Organ preservation in elderly patients with stage I rectal cancer

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THE TREATMENT PARADOX

• 2015: Multicenter prospective RTC (CARTS) demonstrated downstaging in majority of patients with T1-3 rectal cancer treated first with chemoradiation, enabling organ preservation for 55% of patients instead of undergoing total mesorectal excision (TME).¹

• 2022: Multicenter prospective RTC (OPRA) found 74% of patients with stage II/III rectal cancer treated with total neoadjuvant therapy (TNT) had complete or near-complete response enabling watch-and-wait (WW) approach.²

²Garcia-Aguilar et al. J Clin Oncol. 2022
2023: Multicenter prospective trial (NEO) found an observed organ preservation rate of 79% for patients T1-T3 lesions treated with neoadjuvant chemoradiotherapy.3

In select cases (e.g., requiring an APR), these may be treated with neoadjuvant therapy with the goal of organ preservation (as in the bottom pathway in the above flowchart).
WHY PURSUE ORGAN PRESERVATION?
HYPOTHESIS

Rates of organ preservation are higher in elderly patients with high risk T1 or T2 lesions compared to younger patients.
METHODS

**Patient selection**
- National Cancer Database 2004-2020 rectal cancer module
- Inclusion: Adults with high risk stage I rectal cancer (cT1 with high risk features or cT2)

**Variables**
- Independent variable: age < 70 years versus age ≥ 70 years
- Outcome variable: receipt of OP or TME
  - OP: neoadj chemorad +/- local excision
  - TME: any chemorad + TME

**Analysis**
- Binary multivariable logistic regression for odds of receiving OP versus TME
- Modeled with combinatorial testing of variables selected *a priori* and significant on univariate regression
# RESULTS

- 38,714 patients included

<table>
<thead>
<tr>
<th></th>
<th>Non-elderly</th>
<th>Elderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>24,268</td>
<td>12,661</td>
</tr>
<tr>
<td>Gender</td>
<td>41.9% : 58.1%</td>
<td>43.1% : 56.9%</td>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Non-elderly</th>
<th>Elderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>White / Black</td>
<td>79.3% / 9.2%</td>
<td>85.3% / 6.8%</td>
</tr>
<tr>
<td>Academic / Community</td>
<td>36.9% / 6.7%</td>
<td>29.3% / 8.4%</td>
</tr>
<tr>
<td>Private / Medicare</td>
<td>64.2% / 22.3%</td>
<td>10.1% / 87.1%</td>
</tr>
<tr>
<td>CDCC 0 / 3+</td>
<td>80.1% / 1.9%</td>
<td>67.1% / 4.4%</td>
</tr>
<tr>
<td>Metro / Urban</td>
<td>83.8% / 14.5%</td>
<td>82.0% / 15.8%</td>
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</tbody>
</table>
### RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Non-Elderly</th>
<th>Elderly</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TME</td>
<td>17640 (69.45%)</td>
<td>7250 (54.45%)</td>
<td>24890</td>
</tr>
<tr>
<td>OPR</td>
<td>7760 (30.55%)</td>
<td>6064 (45.55%)</td>
<td>13824</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25400</td>
<td>13314</td>
<td>38714</td>
</tr>
</tbody>
</table>

#### Distribution of TME vs OP by Age Cohort

![Distribution of TME vs OP by Age Cohort](image)
RESULTS

Selected odds ratios on adjusted regression analysis

Variables

- Elderly
- Black Race
- Female Gender
- Community Facility
- Uninsurance
- Charlson Deyo 3+
- Urban Region

Odds Ratio
KEY TAKEAWAYS

Limitations
• Retrospective data
• NCDB is not population-based
• Intent of therapy unknown
• Cannot account for non-tracked confounders

• Current guideline recommendations for higher risk stage I rectal cancer is TME.
• A large proportion of patients with high-risk stage I rectal cancer undergo organ preservation instead of TME.
• This is more pronounced in elderly patients, comorbid patients, and disadvantaged patients.
CONCLUSION

Current and ongoing studies have the potential to change the treatment paradigm for patients with high-risk stage I rectal cancer.