# TREATMENT OF RECTAL CANCER

## Treatment of Rectal Cancer

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March 7th, 2005

## Epidemiology

American Cancer Society Statistics for 2002

- 147,500 newly diagnosed cases of colorectal cancer
- 42,000 rectal cancer (~ 30%)
- 74,700 deaths from colorectal cancer

## Rectal Cancer

- Overall 5 year survival has improved from 33% to 57% over the past 40 years
- Improvements in screening, surgical technique, chemotherapy, and radiation therapy have impacted survival

## Rectal Cancer Surgery

- En Bloc proctectomy with total mesorectal excision is now considered the standard of care
- TME in combination with preoperative radiotherapy further reduces recurrence rates
  - Prospective randomized trial of the DCCG
  - N. Engl. J. Med. 345(9):638-46, 2001

## Rectal Cancer Chemotherapy

- 5-FU based adjuvant chemotherapy has been the standard of care for advanced rectal cancer
  - 5-FU treats micrometastases
  - 5-FU acts as a radiosensitizer
- Continuous infusion has shown improved survival and increased time to relapse when compared to bolus therapy

## Rectal Cancer Radiotherapy

- Adjuvant radiotherapy was introduced to decrease the incidence of local recurrence
- Preoperative radiotherapy was introduced to improve rates of sphincter preservation
- Preoperative radiotherapy has decreased toxicity, improved local control, and improved survival when compared to postoperative radiotherapy
  - Swedish Rectal Cancer Trial
  - N. Engl. J. Med 336:980-987, 1997

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## Rectal Cancer Radiotherapy

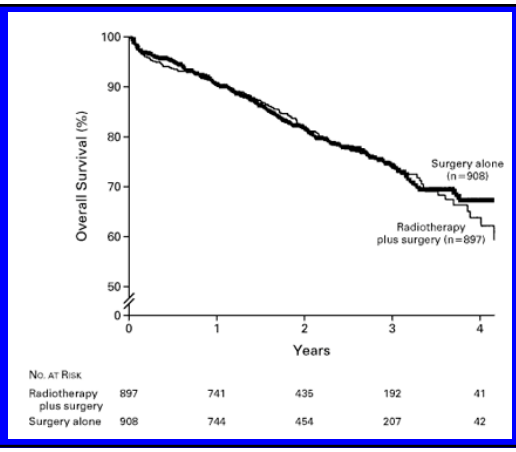
- 5 year risk of local recurrence significantly less in surgery+radiation group (15% Vs. 23%), but showed no difference in 5 year mortality rate
  - Colorectal Cancer Collaborative Group
  - Lancet Oct. '01

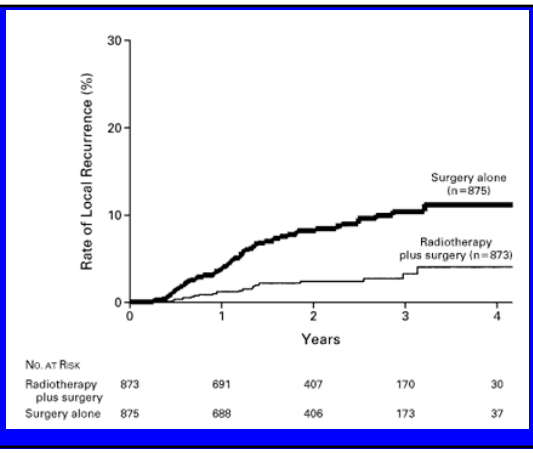
## Rectal Cancer Neoadjuvant Therapy

- Neoadjuvant chemoradiation is becoming the standard of care in the treatment of advanced rectal cancer
- Significant improvements in down staging and complete pathologic responses have been shown with preoperative chemradiation
- Tumor downstaging correlates with improved rates of sphincter sparing surgery, decreased locoregional recurrence, and improved overall survival

## Rectal Cancer Neoadjuvant Therapy

- Short-term preoperative radiotherapy reduces the risk of local recurrence in patient with rectal cancer who undergo a standardized TME
  - Prospective randomized trial of the DCCG
  - N. Engl. J. Med. 345(9):638-46, 2001




## Rectal Cancer Neoadjuvant Therapy

- Preoperative chemoradiotherapy, as compared with postoperative chemoradiotherapy, improved local control and was associated with reduced toxicity but did not improve overall survival
  - German Rectal Cancer Study Group
  - N. Engl J. Med 351;17 Oct 21, 2004

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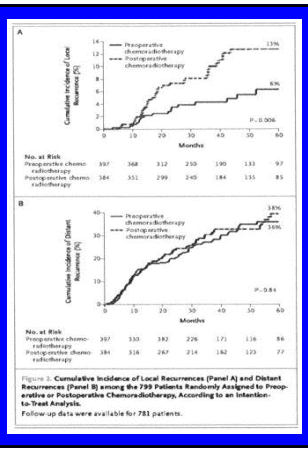



Figure 2. Cumulative Incidence of Local Recurrences (Panel A) and Distant Recurrences (Panel B) among the 799 Patients Randomly Assigned to Preoperative or Postoperative Chemoradiotherapy, According to an Intention-to-Treat Analysis.
Follow-up data were available for 781 patients.

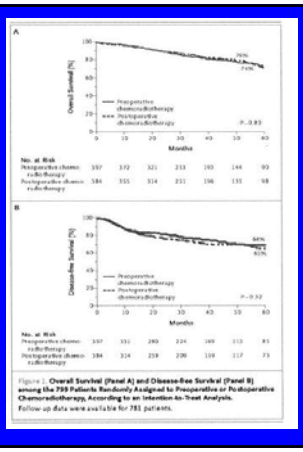



Figure 1. Overall Survival (Panel A) and Disease-free Survival (Panel B) among the 799 Patients Randomly Assigned to Preoperative or Postoperative Chemoradiotherapy, According to an Intention-to-Treat Analysis.
Follow-up data were available for 781 patients.

## Rectal Cancer

Table 3. SURVIVAL AND RECURRENCE DATA BY TREATMENT AND TUMOR SIZE

| | n | | Overall 5-Year Survival (%) | | | Cancer-Specific 5-Year Survival (%) | | | Local Recurrence (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | No PRT* | PRT* | No PRT | PRT | Log rank | No PRT | PRT | Log rank | No PRT | PRT | Log rank |
| All patients | 154 | 85 | 52 | 63 | 0.13† | 60 | 73 | 0.026‡ | 17 | 11 | 0.45§ |
| 0–2 cm | 12 | 17 | 49 | 38 | 0.86 | 49 | 52 | 0.39 | 14 | 16 | 0.59 |
| 2–5 cm | 91 | 53 | 50 | 72 | 0.003 | 56 | 79 | 0.005 | 18 | 14 | 0.41 |
| >5 cm | 51 | 15 | 53 | 44 | 0.13 | 68 | 57 | 0.23 | 14 | 0 | 0.76 |

PRT, preoperative radiotherapy.
* Mantel-Haenszel chi-square evaluation of the proportion of patients in 0–2, 2–5, and over 5-cm groups for no PRT and PRT groups; level of significance $P = .001$.
† Comparison based on Cox regression model, adjusting for tumor size, number of nodes and age; tumor size $P = 0.39$; number of nodes $P < .001$.
‡ Comparison based on Cox regression model, adjusting for tumor size, number of nodes and age; tumor size $P = .14$; number of nodes $P < .001$.
§ Comparison based on Cox regression model, adjusting for tumor size, number of nodes and age; tumor size $P = .12$; number of nodes $P < .045$.

•Delaney & Fazio, Ann Surg 2002

## Rectal Cancer

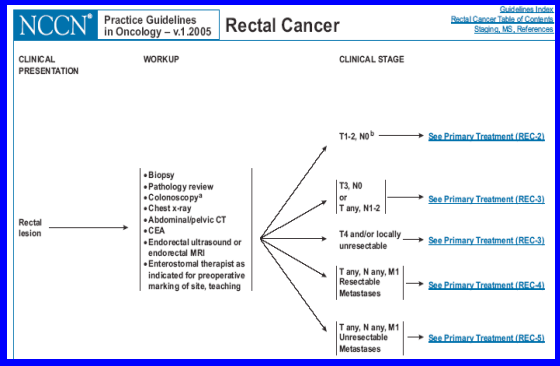
Table 2. SURVIVAL AND RECURRENCE DATA BY NODAL INVOLVEMENT

| | n | | Overall 5-Year Survival (%) | | | Cancer-Specific 5-Year Survival (%) | | | Local Recurrence (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | No PRT | PRT | No PRT | PRT | Log rank | No PRT | PRT | Log rank | No PRT | PRT | Log rank |
| All patients | 157 | 92 | 52 | 63 | 0.07* | 60 | 73 | 0.043* | 17 | 11 | 0.48† |
| N0 | 87 | 48 | 56 | 82 | 0.002 | 66 | 90 | 0.004 | 11 | 9 | 0.82 |
| N1 | 54 | 27 | 52 | 52 | 0.45 | 56 | 52 | 0.85 | 20 | 16 | 0.93 |
| N2 | 26 | 15 | 31 | 32 | 0.59 | 62 | 64 | 0.51 | 32 | 0.0 | 0.06 |
| N1, N2, N3 | 80 | 44 | 45 | 42 | 0.96 | 50 | 54 | 0.67 | 24 | 12 | 0.35 |

PRT, preoperative radiotherapy.
* $P < .001$ adjusting for age and number of nodes between groups, using Cox regression model.
† $P = .045$ adjusting for age and number of nodes between groups, using Cox regression model.

•Delaney & Fazio, Ann Surg 2002

## Current Recommendation ?



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