OUTCOMES IMPROVED AFTER TOTAL MESORECTAL (TME) WORKSHOPS IN BRITISH COLUMBIA (BC)

PT Phang, CE McGahan, G McGregor, JK MacFarlane, C Brown, M Raval, R Cheifetz, H Kennecke, J Hay

Department of Surgery, University of British Columbia and Surgical Oncology Network, British Columbia Cancer Agency

In a province-wide audit in BC in 1996, the 4-year local recurrence for rectal cancer management was 16% overall and 27% for stage 3 cancers using non-standardized rectal cancer surgery techniques and postoperative adjuvant chemoradiation. To improve these outcomes TME education workshops were held in BC in 2002 and 2003 with promotion of change to adjuvant short course preoperative radiation and surgical technique standardized to TME. To assess whether local recurrence was changed, a province-wide audit was repeated for patients treated in the year after the workshops.

In 2003-2004, 396 patients had radical resection of rectal cancers with curative intent. Preoperative adjuvant radiation was given to 49% of patients. 33% of patients received adjuvant chemotherapy. Permanent colostomy was performed in 33% of patients. Median followup was 34.5 months with 91% of patients followed for at least 2 years.

Overall the 2-year survival was 84%, disease-specific survival was 89%, pelvic recurrence was 7%, and distant recurrence was 14%. The 2 year pelvic recurrence was 5.2% (95% CI 1.9-8.5) for patients receiving preoperative radiation and 9% (95% CI 4.7-13.4) for surgery alone. For stage 3 rectal cancers it was 10% and was significantly lower than in 1996 (P=0.03, Kaplan Meier). Overall recurrence risk was 0.57 (95% CI 0.25-0.94, Hazard ratio) compared to 1996.

We conclude that pelvic recurrence was improved after TME education workshops and increased use of preoperative radiation in a province-wide cohort. Knowledge translation with integrated strategy by surgeons and radiation and medical oncologists has been successful in improving outcomes for rectal cancer management in a population setting.

INTRODUCTION

Problem with rectal cancer outcomes in BC

4-year local recurrence in 1996 review
- Overall, 16%
- Stage 3, 27%

1996 rectal surgery
- Non-standardized, most likely not TME

1996 adjuvant therapy
- Postop chemoradiation

BC Rectal Cancer Project – Strategy to improve pelvic recurrence

Education Workshops 2002-03 to implement change in management guidelines
1. Standardize adjuvant Rx to preoperative short course radiation (+ postop chemo)
2. Standardize surgery to TME

Questions:

1. Were pelvic recurrence and survival affected by change in rectal cancer management guidelines in BC?
2. What factors affect pelvic recurrence and survival?

Methods:

- Inclusion: Curative resection of rectal cancer in 1996 and those in the year following the workshops, Oct 2003 to Sep 2004
- All BC hospitals' medical records departments were asked to provide OR, pathology, discharge summary for rectal cancer major resective procedures for the 2003/04 cohort. Rectal cancer cases for the 1996 data were identified from the BC Cancer Registry.
- Adjuvant radiation and chemo data from BCCA records
- Followup data questionnaires sent to GP's

Cohort Charatcteristics

	1996	2003-04	P
Number	283	367	
Age (avg, range)	67.4 (36-95)	67.8 (32-92)	0.696
Sex (F/M)	41% / 59%	37% / 63%	0.299
Distance from anus (<5cm / 5-10cm / >10cm)	20% / 45% / 35%	32% / 42% / 26%	0.001
Surgery (AR+Hartmann / APR)	64% / 36%	66% / 34%	0.651
Stage (I/ II/ III)	34% / 35% / 31%	30% / 30% / 40%	0.062
Radial margin (pos/ neg/ unknown)	4% / 42% / 54%	10% / 87% / 3%	<.001
Radiation (%none / %preop / %postop)	63% / 4% / 33%	35% / 54% / 11%	<.001

ANALYSIS

2-year Pelvic Recurrence

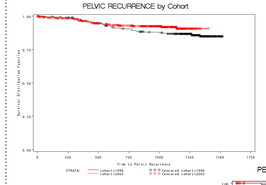
	1996	2003-04	Kapiteijn NEJM 2001
Overall	9.6%	6.9%*	4.9%
	* Log rank, P=0.054		
Stage 1	3.2%	2.3%	0.6%
Stage 2	8.7%	8.8%	3.3%
Stage 3	18.2%	0.092	9.9%

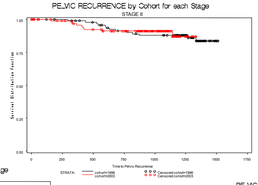
Multivariate Analysis of Pelvic Recurrence (Wald Chi-Square)

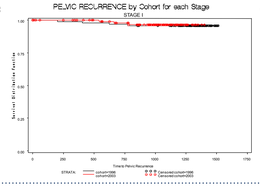
Factors	P-value
Stage	0.004
Radiation treatment	0.005
Radial margin	0.047
Distance from anus	0.129
Type of resection	0.209
Year of study	0.365
Sex	0.678
Age	0.834

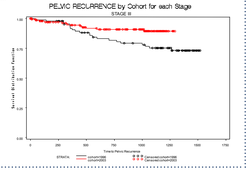
Hazard Ratio for Significant Factors Influencing Pelvic Recurrence

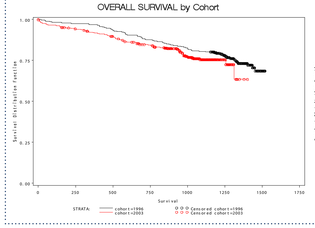
Factor		HR (95% Confidence)	P-value Chi-square
Stage	I	1.00	
	II	6.55 (2.16-19.88)	0.005
	III	4.89 (1.61-14.83)	0.001
Radiation Treatment	Preop	1.00	
	Postop	1.51 (0.65-3.50)	0.336
	None	3.45 (1.56-7.63)	0.002
Radial Margin	Neg	1.00	
	Pos	2.26 (1.01-5.06)	0.047

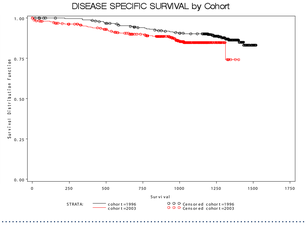












Multivariate Analysis of Disease Specific Survival (Wald Chi-Square)

Factors	P-value
Stage	0.001
Age	0.019
Radiation type	0.039
Radial margin status	0.062
Surgery type	0.107
Distance from anus	0.110
Sex	0.824
Cohort	0.874

CONCLUSIONS

Summary

After TME workshops, BC outcomes similar to Kapiteijn, NEJM 2001
- 2-year local recurrence (6.9%, 4.9%); survival (89%, 87%)

Improved pathology reporting on radial margins
- 1996 – 54% unreported; 2003-04 – 3% unreported, p<0.0001

Increased adjuvant radiation use and switch to preoperative
- No adjuvant radiation: 1996 – 63%, 2003-04 – 35%, p<0.0001

Knowledge translation successful in improving outcomes for rectal cancer management in a population setting

Future Directions

Local recurrence
- High positive radial margin rate (35%) for distal third rectal location
- Strategies: Preop MR prediction of radial margin involvement, education, rectal surgery centres

Rectal function
- High permanent colostomy rates (33%)
- Strategy: Education sessions to review surgical techniques and research on functional outcomes

Conclusions

- Pelvic recurrence has decreased in BC - likely due to increased use of adjuvant radiation and 87% negative radial margin rate
- Pathology reporting is dramatically improved

RECTAL CANCER UPDATE: THE LAST 5CM - DISTAL TME AND BEYOND

Date: Fri-Sat, Oct 24-25, 2008
Place: St Paul's Hospital, Vancouver
Tel: 604.707.5900x3269
Fax: 604.877.6295
Email: ddeslauriers@bccancer.bc.ca

External guest lecturers

- RJ (Bill) Heald (Basingstoke, UK)
- Jose Guillem (MSK, USA)
- Julio Garcia-Aguilar (University of California SF, USA)
- Andy Smith (University of Toronto, CAN)

BC Surgical Oncology Network

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