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Breast cancer in Manitoba: Do surgical oncologists practise differently? ***S. Latosinsky, D. Turner, K. Hildebrand.*** **Division of Surgical Oncology and the Epidemiology and Cancer Registry, CancerCare Manitoba, Winnipeg, Man.**

Introduction: Canadian guidelines for the management of breast cancer were published in February 1998, including these statements: breast conservation is the preferred procedure for early breast cancer; axillary surgery should not be performed for ductal carcinoma in situ (DCIS); the evaluation of axillary nodes should be standard procedure for invasive breast cancer (some omissions are considered acceptable); and a minimum of 10 nodes should be identified when an axillary node dissection (AND) is performed for invasive breast cancer. Our objective was to compare the practice of surgical oncologists to other surgeons in Manitoba with respect to the breast cancer guidelines. **Methods:** Surgical treatment for women with a breast cancer diagnosed from 1999 to 2001 was reviewed using the Manitoba Cancer Registry. The procedures from 1 university hospital were used to approximate those of the 4 surgeons in the province with fellowship training in surgical oncology. Comparisons between other surgeons and surgical oncologists were made using χ^2 tests, with Fisher's exact test for small numbers. **Results:** There were 2380 women with Stage 0–III breast cancer, with 441 (18.5%) treated by surgical oncologists over the 3 years examined. As shown in the Table, surgical oncologists were more likely to perform breast conservation than other surgeons. AND was performed relatively frequently by other surgeons but never by surgical oncologists for DCIS. Surgical oncologists were more likely to omit axillary assessment for invasive disease, particularly for small cancers and for women over 70 years old. Surgical oncologists recovered sufficient nodes from the axilla more often, particularly in the node-positive group. **Conclusions:** In this population-based study, surgical care in Manitoba of patients with breast cancer appeared to be more consistent with Canadian guidelines when provided by surgical oncologists than other surgeons.

Table

Breast cancer procedures by surgeons, in %

Aspect of care	Provincial average	Surgical oncologists	Other surgeons	*p* value
Breast conservation surgery, stages I & II	52.4	67.5	49.6	<0.001
DCIS assessment by AND (≥ 6 nodes)	8.7	0.0	14.0	0.002
Axillary assessment by AND & sentinel node biopsy				
T_1, N_0	84.0	76.5	85.4	0.003
T_{1-3}, N_{0-X}, M_0	80.7	75.6	81.8	0.007
+ age >70 yr	66.8	41.0	70.1	<0.001
<10 axillary nodes identified by AND for stage I & II disease				
All	25.6	19.0	27.0	0.053
Node-negative	28.2	24.4	28.9	0.310
Node-positive	22.2	14.3	24.0	0.054

AND, axillary node dissection; DCIS, ductal carcinoma in situ

Chemotherapy prior to liver resection for colorectal metastases does not adversely affect perioperative outcomes. ***A. Sahajpal, E. Dixon, A. Wei, M.S. Cattral, B.R. Taylor, D.R. Grant, P.D. Greig, S. Gallinger, C.M. Vollmer, Jr.*** **University of Toronto, Toronto, Ont.**

Background: The effects of systemic adjuvant or palliative chemotherapy on morbidity following subsequent hepatic resection for metastases are not well defined. **Methods:** Ninety-six resections for colorectal metastases were performed from July 2001 to July 2003 (93% ≥ 2 segments). Preoperative demographics, perioperative features and postoperative outcomes were followed prospectively. Type of chemotherapy given and the temporal relationship of chemotherapy to the liver resection were analyzed. **Results:** Fifty-three patients (55%) received a mean of 5.7 cycles/6.1 months of systemic chemotherapy prior to hepatic resection, with a median interval of 12 months from end of therapy to resection (range 1–75 mo). Thirty-five received 5FU/leucovorin (5FU/L) alone, 9 had irinotecan in addition to 5FU/L (CPT-11), and 9 were not specified. Preoperative age, sex, comorbidities, ASA score, biochemical and liver enzyme profiles, tumour number, and extent and technique of hepatic resection were equivalent between the chemo and non-chemo cohorts. Mean tumour size was smaller (4.5 cm v. 5.8 cm) and synchronous metastases were half as common (25% v. 49%) in the chemo group. Operative time was equivalent (270 min). Median EBL favoured (1000 mL v. 850 mL), and fewer transfusions (23% v. 15%) were administered to the chemo group. Postoperative liver enzyme peaks were greater, but not significantly, in the chemo group (AST = 402 v. 302 U/L, $p = 0.09$ and ALT = 433 v. 312 U/L, $p = 0.1$). Peak changes in INR and bilirubin did not differ. Complications and length of stay were not dif-

ferent between the groups, and the only death was in the non-chemo group. Of interest, steatosis was present in 28% of the non-chemo and 57% of the chemo resection specimens (p = 0.005) and was marked (> 30%) in 7% and 10%, respectively. When compared with 5FU/L alone, the CPT-11 group had more steatosis (67% v. 51%) but smaller tumours (2.7 cm v. 4.0 cm), less blood loss (800 mL v. 950 mL, p = 0.01), fewer complications (33% v. 43%) and shorter length of stay (6.5 d v. 7.5 d). **Conclusion:** Despite variations in biochemical function following hepatic resection, short-term clinical outcomes are not affected by the administration of chemotherapy prior to hepatic resection. Furthermore, there is no detrimental effect of close timing prior to resection, and there is no appreciable difference between 5FU/irinotecan–containing regimens or 5-FU alone. Hepatic steatosis appears to be a consequence of chemotherapy.

Identification of colorectal cancer opinion leaders for a knowledge transfer program in Ontario. ***F.C. Wright, D.P. Ryan, J. Dodge, L. Last, C.H.L. Law, A.J. Smith.*** **Sunnybrook and Women's College Health Sciences Centre, Toronto, Ont.**

Introduction: Accurately staging patients with colorectal cancer (CRC) is critically important, as it has a direct effect on prognosis and treatment. In a population-based study, we demonstrated that 73% of stage II CRC patients in Ontario are staged-based on an assessment of an inadequate number of lymph nodes. In response, we have devised a multimodal strategy combining *formal* (lectures) and *informal* (opinion leaders) continuing education strategies. Opinion leaders (OL) are educationally influential physicians who are identified by their colleagues as people who (1) encourage learning and enjoy sharing their knowledge; (2) have a high level of clinical expertise and always seem up-to-date; and (3) treat others as equals. **Materials and methods:** One thousand two hundred and forty-three (1243) surgeons and pathologists in Ontario were sent surveys that utilized a modified Hiss and Stross OL identification method. Each physician received 4 formal mailings (including incentives). Physicians were requested to identify a surgical or pathology OL for CRC and the designated community leader. **Results:** The response rate was 41% for surgeons and 42% for pathologists. Respondents had an average of 15 years in practice; the majority were male, and 69% worked at nonacademic centres. Sixty-three surgical OLs for CRC and 6 pathology OLs for CRC were recognized. Forty-two of all medical centres in Ontario identified an OL; 39 did not. Surgical OLs were formal positional leaders (e.g., departmental heads) in 37% of medical centres, and 43% of surgical OLs worked at an academic centre. Eighty-three percent of the pathology OLs were the designated community leader, and 50% worked at an academic centre. **Conclusion:** Opinion leaders for colorectal cancer have been identified in Ontario. Using the method of Hiss and Stross, significantly more surgical than pathology OLs were identified. Although 75% of Ontario CRC surgery is performed in community hospitals, a disproportionate number of OLs work at academic centres. We plan to academically detail OLs and study their impact in dispersing knowledge about CRC staging in a multifaceted education plan directed at surgeons and pathologists.

Rectal cancer outcomes are affected by referral patterns of general surgeons. ***N.L. Davis, M. Mackinnon, T. Phang, R. Cheifetz.*** **Surgical Oncology Program, British Columbia Cancer Agency, BC.**

Introduction: In British Columbia, registration of malignant disease in a Cancer Registry is mandatory; however, referral to a multidisciplinary assessment team is not. General surgeons managing rectal-cancer patients therefore have a pivotal role in selecting patients who would benefit from referral to the British Columbia Cancer Agency (BCCA) for multidisciplinary treatment. This study evaluates referral patterns of general surgeons in selecting patients for multiple adjuvant therapies based on published provincial cancer-management guidelines. **Methods:** The British Columbia Provincial Cancer Registry was used to identify patients with rectal cancer treated in 1996. In total, 495 patients were registered, of whom 345 underwent curative, elective surgery. Of these patients, 131 (38%) were referred to BCCA, and the remaining 214 patients were treated in the community. Outcomes of these cohorts of patients were analyzed via Kaplan–Meier survival curves. **Results:** Surgeons preferentially referred patients to BCCA based on the stage of their cancer. Of 153 Tis or T1 patients, 17 (11%) were referred to BCCA, whereas 75% (70 of 93) patients with T3 lesions were referred. Reasons for nonreferral did not appear to be influenced by either age or distance to the cancer centre. Patients referred to BCCA underwent more staging investigations and additional imaging studies compared with patients treated exclusively by surgeons. Forty-six percent of patients seen at BCCA had abdominal imaging, versus 8% of those not referred. Although chemotherapy can be given in the community, BCCA is the only provider of radiation therapy. Based on published practice management guidelines, all patients with Stage II and III disease (184) should have been considered for chemo/radiation therapies. Of these patients, 74 were not referred and therefore did not receive radiation, and only 30% of eligible patients received chemotherapy in the community. Kaplan–Meier survival curves showed that there was a significant survival benefit for Stage III patients referred to BCCA (p = 0.01), but no difference in survival of Stage II patients at 5 years. **Conclusion:** Patients with advanced-stage cancer are more likely to be appropriately referred for multidisciplinary care and have a survival advantage when compared with patients who do not undergo multidisciplinary treatment. Surgeons need to be aware of their pivotal role in managing rectal cancer patients, however; this study would suggest that staging and overall cancer management is enhanced by multidisciplinary assessment.

Laparoscopic versus open resection of gastric cancer: Is there an added risk to conversion? ***D. Kumar, R.P. Boushey, J. Mamazza, E.C. Poulin, C.M. Schlachta.*** **The Centre for Minimally Invasive Surgery, St. Michael's Hospital, University of Toronto, Toronto, Ont.**

Background: The management of gastric cancer using laparoscopic techniques remains controversial. The effect of conversion on outcomes has not been fully explored. The purpose of this study was to assess perioperative and some cancer-related outcomes in patients with gastric adenocarcinoma undergoing

open (OR) and laparoscopic resection (LR), as well as to assess the impact of conversion on these outcomes. **Methods:** Thirty consecutive patients with gastric cancer treated from 1998 to 2002 who underwent LR or OR were reviewed. Outcomes assessed as intent-to-treat included blood loss (EBL), transfusion requirements, operative time, conversion rate, length of stay, final pathologic staging, survival and recurrence. **Results:** Fifteen patients each underwent LR and OR. The 2 groups were similar for sex distribution, age, weight, size and location of tumour. Conversion rate for LR was 40%, 2 for bleeding and 4 for unclear planes. Mean operating time was significantly longer in patients treated with LR than with OR (284 ± 69 min v. 192 ± 53 min, $p < 0.001$). There was no significant difference in median blood loss (LR 400 mL v. OR 450 mL) or transfusions (LR 27% v. OR 33%). The mean number of nodes retrieved (LR 8.4 ± 5.6 v. OR 9.5 ± 5.9), clear margin rate (LR 100% v. OR 73%) and stage distribution was similar for both groups. Median length of stay was significantly shorter for LR than for OR (7 v. 9 d, $p < 0.05$). Complication rates were similar. Median follow-up was similar (LR 17 mo v. OR 13.5 mo). There was one postoperative death in the LR group from complications of cirrhosis. At last follow-up, 40% of patients treated with OR versus 20% of LR had died of their disease; 60% in the LR group had no evidence of disease versus 46.7% in OR group. Subgroup analysis revealed that patients requiring conversion had longer operating times than OR and significantly higher EBL than either OR or successful LR. Median length of stay was 7 days after conversion and 5 days with successful LR ($p > 0.05$). **Conclusion:** Laparoscopic surgery offered shorter lengths of stay but with significantly longer operative times. Conversion rates were associated with significantly higher blood loss but not increased length of stay. Cancer-related outcomes did not appear to be altered by type of surgery.