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Abstracts

Multivisceral resections for locally advanced pelvic malignancies: a single institution experience. ***Kanishk Karol, MD; Philemon H. Leung, MD; Paul Johnston, MD, FRCSC; Alex Mathieson, MD, FRCSC.* From Memorial University of Newfoundland, St. John's, NL.**

Background: Management of pelvic malignancies often involves a multivisceral resection (MVR). These resections are associated with considerable morbidity; however, in appropriate circumstances, they have been found to improve local control and overall survival. It has been suggested that optimal outcomes occur when MVRs are performed at high-volume centres. Here we sought to examine outcomes following MVRs at our institution, a lower-volume centre with specialists experienced in MVR. **Methods:** A retrospective chart review was conducted of patients who underwent MVR for locally advanced pelvic malignancies at our institution from July 1, 2010, to Dec. 31, 2016. **Results:** A total of 27 patients were identified as having undergone an MVR. Reasons for MVR included colorectal cancer (n = 23), anal squamous cell cancer (n = 2), prostate cancer (n = 1) and cervical cancer (n = 1). Sixteen patients (59%) were female. Median age was 64 (range 40–75) years. One patient underwent an R2 resection. All gross disease was resected in the remaining 26 patients, with 18 patients (67%) subsequently found to have microscopically negative margins (R0). One patient died within 30 days of surgery. Overall complication rate (Clavien–Dindo) was 52%, with major and minor complication rates at 22% and 44%, respectively. Predicted 5-year overall survival and disease-free survival were 53.6% and 22.5%, respectively. **Conclusion:** MVRs may be performed in lower-volume centres with acceptable outcomes by specialists who are well trained in these procedures. Review of outcomes is important if multivisceral resection is to continue in lower-volume centres.

Evaluating quality and completeness of gastrectomy for gastric cancer: review of surgical videos from the public domain. ***Matthew Dixon, MD; Vanessa Palter, MD, PhD; Savtaj Brar, MD, MSc; Natalie Coburn, MD, MPH.* From the Department of Surgery, University of Toronto, Toronto, Ont. (Dixon, Brar, Coburn); St. Michaels Hospital, Toronto, Ont. (Palter); Mount Sinai Hospital, Toronto, Ont. (Brar); Sunnybrook Health Sciences Centre, Toronto, Ont. (Coburn); and Sunnybrook Research Institute, Toronto, Ont. (Coburn).**

Background: YouTube has provided a forum to share surgical videos in the public domain that may be used for education. The quality of surgery and accompanying educational material is unknown. YouTube videos of gastrectomy with D2 lymphadenectomy (D2-LND) for gastric cancer were evaluated for quality and completeness. **Methods:** YouTube was searched using the terms "D2 lymphadenectomy" and "gastric cancer" for open and laparoscopic videos. The Korean Laparoscopic Gastrointestinal Surgical Society (KLASS) outlined 22 steps that define quality and completeness of D2-LND. These guidelines were used to score D2-LND for each video. Four physician reviewers independently scored each surgical video. Scores were compared using the Student t test. **Results:** Twenty videos were included: 10 laparoscopic and 10 open surgeries. Each video was scored for quality and completeness and assigned a score out of 22. The mean score for open D2-LND was 15 (95% confidence interval [CI] 12.54–17.46). The mean score for laparoscopic D2-LND was 15.4 (95% CI 14.34–16.46, p = 0.77). The most consistently performed steps were the dissection of lymph node stations 1, 3, 4 and 5. The most commonly omitted steps were the dissection of lymph node station 6: exposure and identification of the lowest anterior superior pancreaticoduodenal vein, removal of the prepancreatic soft tissues above the lowest anterior superior pancreaticoduodenal vein, removal of the prepancreatic soft tissues above the level of the bifurcation of the anterior superior pancreaticoduodenal vein and right gastroepiploic vein. **Conclusion:** There is a wide range of quality and completeness of D2-LND videos. On average, D2-LND videos are only two-thirds complete. As online surgical videos are becoming an important source of learning surgical techniques, it is imperative that they are reviewed and held to high standards.

Enrolment of esophago-gastric cancer patients in a clinical fast-track program improves time to treatment and quality of life. ***Atubani Burnett, MD, PhD; Julie Breau, MD; Mara Leimanis, MD; Jack Mouhanna; José Ramirez-Garcialuna, MD, MSc; Emma Lee; Mary Diovisalvi, RN; Eleanore Eckert; Thierry Alcindor, MD; Jamil Asselah, MD; Marie Vanhuyse, MD; Joanne Alfieri, MD; Marc David, MD; Carmen Mueller, MD, ME; Jonathan Spicer, MD, PhD; Jonathan Cools-Lartigue, MD, PhD; Lorenzo Ferri, MD, PhD.* From the McGill University Health Centre, Montreal, Que.**

Background: Esophago-gastric cancers are aggressive malignancies requiring numerous investigations to plan complex multimodal therapy, which can be associated with long delays impacting quality of life. We sought to determine the effect of a newly implemented, streamlined, interdisciplinary pathway on the time required to achieve treatment and on quality of life (QoL) for esophageal and gastric cancer patients. **Methods:** A streamlined multidisciplinary pathway for patients referred to a high-volume upper-gastrointestinal (GI) cancer clinic was generated with input from physicians, nurses, nutritionists and social workers. Patients who received a new diagnosis of esophageal or gastric cancer from 2014 to 2016 were enrolled, and consenting patients completed serial QoL questionnaires (FACT) at baseline, pretreatment and 1 month post-treatment. Dysphagia (DS) was quantified on a 5-point scale. The time interval from index endoscopy to pathological diagnosis, computed tomography (CT), first clinic with upper-GI program, and start of definitive treatment were evaluated. **Results:** In total, 214 patients consented to participate, including 120 esophageal/esophagogastric junction and 94 gastric cancer patients. Thirty-one patients (14.5%) had severe dysphagia (DS = 3–4), were prioritized for treatment, and had reduced median times from endoscopy to CT (p = 0.05), clinic (p < 0.001) and treatment (p < 0.001). One hundred thirty-six patients (63.6%) were stage 2–3, were prioritized for treatment and had reduced time from endoscopy to CT (p < 0.001), clinic (p < 0.001) and treatment (p < 0.001). FACT surveys showed increased QoL for all patients from baseline to pretreatment, indicating that entry into a streamlined program was sufficient to improve QoL. **Conclusion:** Structured interdisciplinary treatment programs for upper-GI cancers can expedite time to treatment and improve QoL.

Evaluation of the KT-MCC strategy to improve the quality of decision-making for Ontario multidisciplinary cancer conferences. ***Christine Fahim, PhD; Meghan M. McConnell,***

PhD; Frances C. Wright, MD, MEd; Ranil R. Sonnadara, PhD; Marko Simunovic, MD, MPH. **From the Department of Health Research Methods, Evidence and Impact, McMaster University, Hamilton, Ont. (Fahim, Simunovic); the Department of Health Policy and Management, Johns Hopkins University, Baltimore, MD (Fahim); the Department of Innovation in Medical Education, University of Ottawa, Ottawa, Ont. (McConnell); the Department of Surgery, University of Toronto, Toronto, Ont. (Wright); and the Department of Surgery, McMaster University, Hamilton, Ont. (Sonnadara, Simunovic).**

Background: The use of multidisciplinary cancer conferences (MCCs) has increased greatly in Ontario and elsewhere, but there has been almost no evaluation of the quality of MCC decision-making. We piloted the KT-MCC Strategy, a knowledge translation (KT) strategy designed to improve the quality of MCC decision-making in Ontario MCCs. **Methods:** Theoretical Domains Framework interviews with stakeholders (n = 21) identified barriers and facilitators to optimal MCC decision-making. Identified factors were integrated into the COM-B Behaviour Change Wheel to produce potentially useful KT interventions. Focus groups (n = 3, 18 participants) provided face validity for the selected interventions. Four different MCC teams in and around the Hamilton area selected interventions of interest to their groups. Overall MCC quality and per-case decision-making quality were evaluated using the MTOT and MTB-MODe tools, respectively, in a before-and-after study design. **Results:** Barriers to decision-making included gaps in case preparation and discussion, leadership and teamwork. The KT-MCC interventions made available to teams included workshops, team and chair training, synoptic discussion and standard intake forms, and audit and feedback. Uptake of and compliance with intervention components varied by team. The overall quality of MCCs improved by 11% (41.6 to 47.7, p = 0.013). The quality of per-case decision-making did not improve significantly (32.3 to 31.2, p = 0.419). **Conclusion:** This study is one of few attempts to evaluate MCC decision-making quality and provides metrics for quality assessments. The KT-MCC marginally improved overall MCC quality, but did not improve the quality of per-case decision-making. We suggest the need for routine MCC quality assessment.

Population-level survival for esophageal cancer: an analysis of 13 930 patients in a regionalized, single-payer health system. ***Vaibhav Gupta, MD; Biniam Kidane, MD, MSc; Jolie Ringash, MD, MSc; Rinku Sutradhar, PhD; Gail Darling, MD; Natalie Coburn, MD, MPH.*** **From the Division of General Surgery, Department of Surgery, University of Toronto, Toronto, Ont. (Gupta, Coburn); the Section of Thoracic Surgery, Department of Surgery, University of Manitoba, Winnipeg, Man. (Kidane); the Department of Radiation Oncology, University of Toronto, Toronto, Ont. (Ringash); the Institute for Health Policy, Management, and Evaluation, University of Toronto, Toronto, Ont. (Sutradhar); and the Division of Thoracic Surgery, Department of Surgery, University of Toronto, Toronto, Ont. (Darling).**

Background: Regionalized cancer care may improve short- and long-term survival for esophageal cancer (EC). This study defines perioperative and long-term survival for EC on a population level. **Methods:** A population-based retrospective cohort study was performed using linked health administrative data in Ontario. Adults diagnosed with EC between 2002 and 2014 were included. Thoracic surgery was regionalized to 15 centres of excellence by 2010. The Kaplan–Meier method was used to estimate median survival. Rates of perioperative mortality (in-hospital and 90-day post-discharge death) were calculated before and after regionalization. Multivariable logistic and Cox regression were used to identify factors associated with short- and long-term survival. **Results:** In total, 13 930 patients were diagnosed with EC during the study period. Median survival was 10.1 months from date of diagnosis (95% confidence interval [CI] 9.9–10.5). Age, socioeconomic status and region of residence were significantly associated with long-term survival. Approximately 30% of the cohort (n = 3880) underwent curative-intent surgery and had a median survival of 24.5 months (95% CI 23.4–25.9) from the date of surgery. In these patients, age, socioeconomic status, major surgical complications and year of diagnosis were significantly associated with long-term survival (p < 0.001). Perioperative mortality decreased from 13.8% in 2002 to 5.4% in 2014 (p < 0.001). Only age and major surgical complications were associated with increased perioperative mortality (p < 0.001). Surgery at a thoracic centre reduced the odds of perioperative mortality (odds ratio 0.63, 95% CI 0.49–0.81), but did not influence long-term survival (p = 0.79). **Conclusion:** Perioperative mortality significantly decreased over time as esophageal cancer surgery was regionalized to centres of excellence. This did not affect long-term survival.

The treatment and outcome of Merkel cell carcinoma in the last 15 years: a multi-institutional study. ***Stephanie Johnson-Obaseki, MD, MSc; Andrea Marie Ibrahim, MSc; Gabrielle Paull, MSc; Elham Sabri, MSc; Samuel Rodriguez-Qizilbash, MD; David Berger-Richardson, MD; Rami Younan, MD; Jessika Hétu, MD; Frances Wright, MD, MEd; Carolyn Nessim, MD, MSc.*** **From the Ottawa Hospital Research Institute (OHRI), The Ottawa Hospital, Ottawa, Ont. (Johnson-Obaseki, Ibrahim, Sabri, Nessim); the University of Ottawa, Ottawa, Ont. (Johnson-Obaseki, Paull, Nessim); the Centre Hospitalier de l'Université de Montréal (CHUM), Université de Montréal, Montreal, Que. (Rodriguez-Qizilbash, Younan); the Université de Sherbrooke, Sherbrooke, Que. (Rodriguez-Qizilbash); and the Sunnybrook Research Institute, University of Toronto, Toronto, Ont. (Berger-Richardson, Wright).**

Background: Limited studies have reported on treatment outcomes in Merkel cell carcinoma (MCC). In this study, we describe treatment and survival outcomes of MCC in Canada. **Methods:** A multicentre retrospective review of early-stage MCC at 4 Canadian institutions was conducted. Patient demographics, primary tumour characteristics, treatment and survival data were collected. Recurrence-free (RFS) and overall survival (OS) were calculated using Kaplan–Meier analysis. Statistical comparisons (log-rank test and Cox regression) were conducted. **Results:** In total, 171 patients were identified (36.4% stage I, 12.4% stage IIA, 17.3% stage IIB, 12.4% stage IIIA, 21.6% stage IIIB). The majority of patients were male (64.3%), the mean age was 73 years, and 12.1% had prior immunosuppression. Primary sites of disease were the head and neck (50.3%) followed by upper

extremity (17.5%), lower extremity (17.0%), trunk (10.5%) and unknown primary (4.7%). A total of 36.8% of patients were treated with surgery alone, 48.5% with surgery + neoadjuvant or adjuvant treatment and 14.7% with radiation alone. The median follow-up time was 2.22 years (interquartile range 0.97–4.17). A total of 35.1% of patients experienced a recurrence (11.7% local, 25.7 regional, 19.9% distant). The 5-year RFS and OS were 59.2% and 61.4%, respectively, for the entire cohort. The 5-year OS for patients with stage I, II and III disease was 73%, 58% and 41%, respectively. Patients treated with surgery + neoadjuvant or adjuvant treatment had better outcomes than those treated with radiation or surgery alone (hazard ratio 0.34, 95% confidenc interval 0.15–0.75, p = 0.008). **Conclusion:** MCC is a rare and aggressive cutaneous malignancy with a rising incidence. While surgery remains the primary treatment, new adjuvant therapies (e.g., immunotherapy) are required to improve outcomes in higher-risk patients.

Gene mutations associated with tumour-infiltrating lymphocytes in melanoma. ***Gabrielle Gauvin, MD; Fernando Lambreton, MD; Elizabeth Handorf, PhD; Jimson W. D'Souza, MD; Jeffrey Farma, MD.*** **From the Department of Surgical Oncology, Fox Chase Cancer Center, Philadelphia, Pa. (Gauvin, Lambreton, D'Souza, Farma); and the Department of Epidemiology and Biostatistics, Fox Chase Cancer Center, Philadelphia, Pa. (Handorf).**

Background: The presence of tumour-infiltrating lymphocytes (TILs) can predict response to immunotherapy. However, specific gene mutations associated with TIL are less well understood. In this retrospective cohort study, we explored the common gene mutations seen in primary melanoma associated with TILs. **Methods:** Patients with a pathology report documenting presence or absence of TILs and who underwent next-generation sequencing between 2000 and 2017 were included in this study. Statistical analysis was performed using Wilcoxon or χ^2 tests as appropriate. **Results:** One hundred twenty-seven patients were included (mean age 62 years, 62% male). Primary tumour location was as follows: 50% extremity, 35% trunk, 12% head/neck, 2% genitalia, 1% unknown. In total, 25% of patients presented with stage I disease, 62% stage II, 9% stage III, and 4% stage IV; 9% of patients had brisk TIL (n = 12), and 45% had nonbrisk TIL (n = 57). The *BRAF* mutation was present in 48% of patients with TILs and 23% of patients without TILs (p = 0.004). The *BRAF* V600E mutation was seen in 32% with TILs versus 18% with no TILs (p = 0.066). Mutations in *FBXW7* were present in 0% of patients with TILs versus 9% with no TILs (p = 0.012). *NRAS* was mutated in 20% of patients with TILs versus 49% with no TILs (p = 0.001). The mean number of mutations was similar in both groups (1.6 TILs v. 1.7 no TILs, $p > 0.05$). **Conclusion:** Melanomas with TILs have a higher proportion of *BRAF* mutations, and a lower proportion of *FBXW7* and *NRAS* mutations. These findings are under further investigation, looking at response in these subgroups to systemic therapy.

Is routine high ligation of the inferior mesenteric artery in rectal cancer necessary? ***Andrea M. Covelli, MD, PhD; Sami A. Chadi, MD, MSc; Fayez A. Quereshy, MD, MBA.*** **From the Department of Surgery, Division of General Surgical Oncology, University of Toronto, Toronto, Ont. (Covelli, Quereshy); the Department of Surgery, Division of Colorectal Surgery, University of Toronto, Toronto, Ont. (Chadi, Quereshy); the Department of Surgery, Division of General Surgery, Toronto Western Hospital – University Health Network, Toronto, Ont. (Chadi, Quereshy); and the Department of Surgery, Division of General Surgical Oncology, Princess Margaret Cancer Centre, Toronto, Ont. (Quereshy).**

Background: High ligation of the inferior mesenteric artery (IMA) for rectal and sigmoid cancers is standard of care. Few data exist about lymph node (LN) positivity of apical LNs at the root of the IMA. We wished to determine the feasibility of low ligation and separately harvesting apical IMA LNs and characteristics of positive apical LNs. **Methods:** A prospective chart review was completed of patients with rectal or sigmoid cancer treated by a single high-volume colorectal surgeon between August 2012 and July 2015. Patients received surgery with curative intent. Low ligation of the IMA and separate harvesting of the apical LNs en-bloc was planned. **Results:** Eighty-six patients underwent either low anterior or abdominal perineal resection: 72% via laparoscopy, 16% via robotic assistance and 12% via laparotomy. Low ligation and apical LN harvesting was feasible in 82 patients. In total, 95% of patients who underwent low ligation had ≥ 12 LNs in the rectosigmoid specimen alone, excluding apical LNs. In total, 38% of patients had positive LN disease. Two patients had positive apical LNs. Apical LNs were positive in patients with pT3 disease but not pT4 or synchronous M1a. Positive apical LNs did not increase pathological staging. Seven patients experienced a recurrence of local or distant disease. Patients who experienced a recurrence had positive nodal disease but negative apical LNs. **Conclusion:** Low ligation and harvesting of apical IMA lymph nodes is frequently achievable. Patients with positive LN disease rarely have positive apical nodes. Positive apical LNs did not provide further clinical information, questioning the need for routine high ligation.

Establishing a "new normal": a qualitative exploration of women's body image after mastectomy. ***Andrea M. Covelli, MD, PhD; Nancy N. Baxter, MD, PhD; Frances C. Wright, MD, MEd.*** **From the Department of Surgery, University of Toronto, Toronto, Ont. (Covelli, Baxter, Wright); the Department of Surgery, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Ont. (Baxter); the Institute of Health Policy, Management, and Evaluation, University of Toronto, Toronto, Ont. (Baxter, Wright); and the Department of Surgery, Odette Cancer Centre and Sunnybrook Research Institute, Sunnybrook Health Sciences Centre, Toronto, Ont. (Wright).**

Background: Breast reconstruction following unilateral (UM) and contralateral prophylactic mastectomy (CPM) has been increasing; however, not all women undergo reconstruction. We wished to explore women's experiences after UM with or without CPM and their decisions to undergo reconstruction. **Methods:** Purposive sampling identified women who underwent mastectomy with and without reconstruction across the Greater Toronto Area. Patients varied in their age, location of treatment and extent of surgery. Data were collected through semistructured interviews. Constant comparative analysis identified key concepts. **Results:** Data saturation was achieved after 29 interviews. Fifteen women underwent

UM, and 14 underwent UM + CPM. Eleven women underwent reconstruction: 8 who underwent UM + CPM and 3 who underwent UM alone. Four patients were awaiting reconstruction (2 UM + CPM, 2 UM alone). The median age was 55 years. Establishing a "new normal" was the dominant theme. All women described their immediate postoperative period as a time of "disfigurement" and/or "loss." Women felt that breasts define them as "feminine" and "normal," whereas postmastectomy women felt "abnormal." For some women appearing "normal" was achieved through reconstruction. For those who did not want reconstruction, normalcy was achieved with prostheses. Reasons for choosing reconstruction included becoming "almost normal" and desiring symmetry/balance. Reasons women did not choose reconstruction included not wanting further surgery, wanting to "move on," and satisfaction with prostheses. Irrespective of the decision around reconstruction, most women continued to experience some degree of self-consciousness, which they "camouflaged" with clothing. No woman voiced regret around her decision for mastectomy with or without reconstruction. **Conclusion:** Women described "establishing a new normal" after mastectomy. Despite ongoing body-image concerns, no woman regretted her choice of surgery.

Conservative mastectomy in breast cancer patients: oncological and surgical outcomes associated with nipple preservation, locally advanced disease and prepectoral immediate reconstruction. ***Karyne Martel, MD; Stephanie Wong, MD; Tassos Dionisopoulos, MD; Alex Viezel-Mathieu, MD; Mark Basik, MD; Sarkis H. Meterissian, MD; Jean-François Boileau, MD*. From the Department of General Surgery, McGill University, Montreal, Que. (Martel, Wong, Basik, Meterissian, Boileau); the Jewish General Hospital, Montreal, Que. (Dionisopoulos, Basik, Boileau); the Department of Plastic Surgery, McGill University, Montreal, Que. (Dionisopoulos, Viezel-Mathieu); and the Royal Victoria Hospital, Montreal, Que. (Meterissian).**

Background: Nipple preservation and anatomic mastectomy with prepectoral reconstruction enable breast cancer patients to undergo immediate one-stage reconstruction. Concerns with oncologic safety and risks of complication have limited their use, especially in locally advanced disease (LABC). **Methods:** We undertook a retrospective review of a prospectively collected database of patients undergoing mastectomy for cancer at a single institution between January 2005 and September 2017. Surgical and oncological outcomes of patients who had conservative mastectomies, defined as skin (SSM) with or without nipple preservation (NSM), with immediate reconstruction were analyzed. **Results:** Two hundred five conservative mastectomies with immediate reconstruction were performed for stage 0–3 breast cancer, including 19% of LABC. In total, 32% of the patients received neoadjuvant treatment (pCR 30%). Radiation therapy was administered to 35% of reconstructed breasts. Reconstruction was done with prepectoral implant (38%), retropectoral implant (61%) or autologous tissue (1%). The overall perioperative complication rate was 24%: NSM (31%) v. SSM (18%) (p = 0.03); prepectoral (33%) v. retropectoral (18%) (p = 0.016) (odds ratio 1.79, p = 0.12 when adjusted for NSM); LABC (24%) v. non-LABC (25%) (p = 0.91). During a mean follow-up of 29 months, we observed 3 (1.5%) local recurrences, 4 (2%) regional recurrences and 10 (5%) distant recurrences. There was no difference in overall recurrence rate with nipple preservation (NSM v. SSM, p = 0.98) or type of reconstruction (retropectoral v. prepectoral, p = 0.09) nor between the LABC and non-LABC (p = 0.48). No nipple recurrence was observed. The overall 2-year disease-free survival was 92%. **Conclusion:** At early follow-up, neither nipple preservation, prepectoral reconstruction or LABC was associated with worse oncological outcomes in breast cancer patients undergoing conservative mastectomy with immediate reconstruction.

What are the odds of colorectal polyps or cancer in patients with abnormal fecal occult blood tests? Results from a population-based screening program. ***Lisa Findlay-Shirras, MBBS; Kathleen M. Decker, PhD; Harminder Singh, MD, MPH; Natalie Biswanger, BSc; Jason Park, MD, MEd.* From the Department of Surgery, University of Manitoba, Winnipeg, Man. (Findlay-Shirras, Park); the Department of Community Health Sciences, University of Manitoba, Winnipeg, Man. (Decker, Singh); the Department of Internal Medicine, University of Manitoba, Winnipeg, Man. (Singh); the Research Institute in Oncology and Hematology, Winnipeg, Man. (Decker, Singh); the Epidemiology and Cancer Registry, Winnipeg, Man. (Biswanger); and the Department of Surgical Oncology, CancerCare Manitoba, Winnipeg, Man. (Park).**

Background: Most provinces in Canada have launched population-wide, fecal-based colorectal cancer (CRC) screening programs. These have, however, led to challenges about how to proceed with follow-up testing for individuals with abnormal results given the sheer number of tests and limited endoscopy capacity in publicly funded systems. This study assessed the positive predictive value (PPV) of fecal-occult blood screening tests (FT) and sociodemographic and clinical factors associated with adenomas or CRC in individuals with abnormal FT results. **Methods:** We retrospectively reviewed all individuals (age 50–74 years) who participated in Manitoba's population-based ColonCheck screening program (using high-sensitivity guaiac FT) from 2007 to 2014 (n = 118 096 FTs). Sociodemographic and clinical factors assessed included age, sex, geography (urban/rural), deprivation index, resource utilization band (as a measure of health status), and screen type (first or subsequent screening). **Results:** The FT abnormal rate was 3.5% (3876 abnormal tests). Of 2930 completed colonoscopies, 594 adenomas, 601 advanced adenomas, and 126 CRCs were detected. The PPV was 40.8% for any adenoma and 4.3% for CRC. After adjusting for all variables, older age (odds ratio [OR] 1.20, 95% confidence interval [CI] 1.05–1.37) and male sex (OR 1.71, 95% CI 1.40–2.07) were associated with higher odds of identifying adenomas, and older age (OR 1.74, 95% CI 1.52–2.00) was associated with higher odds of identifying cancer. **Conclusion:** The odds of adenomas or CRC in patients with abnormal FT results are variable. Practitioners and screening programs can use these findings to triage patients, especially older patients and men, in order to optimize the use of endoscopy resources, and expedite diagnoses and potential treatments.

Extent of groin dissection in melanoma: a population-based study of practice patterns and outcomes. ***Suzana Küpper, MD; Janice Austin, MD, MSc; Mantaj Brar, MD, MSc; Frances Wright, MD, MEd; May Lynn Quan, MD,***

***MSc*. From the University of Alberta, Edmonton, Alta. (Küpper, Quan); and the University of Toronto, Toronto, Ont. (Austin, Brar, Wright).**

Background: In patients with melanoma metastatic to the groin, data are lacking on the extent of dissection required. The purpose of this study was to determine the frequency of deep pelvic dissections performed for melanoma and to determine whether the addition of a deep dissection affects patient outcomes. **Methods:** We conducted a retrospective review of 2 prospectively maintained databases (Synoptec in Alberta; Sunnybrook hospital in Ontario). A supplemental review of charts was carried out to capture variables not contained within the databases. Variables collected included patient demographics, disease demographics, perioperative and oncologic outcomes. **Results:** A total of 322 patients were included, 208 (64.4%) of whom received a superficial dissection and 114 (35.3%) received a combined dissection. Recurrence was identified in 161 patients (50.2%) with a median time to recurrence of 9 months. At a median follow-up of 31 months, 166 (51.4%) were alive with no evidence disease, 52 (16.1%) were alive with disease and 107 (33.1%) had died. There was no difference in adjusted overall survival (OS) between the superficial and combined dissection groups. Recurrence-free survival (RFS) was worse in the combined dissection group (hazard ratio 1.4, 95% confidence interval 1.01–1.99, $p = 0.04$). **Conclusion:** Approximately one-third of inguinal node dissections performed for melanoma include a deep dissection. The addition of a deep dissection is associated with a decreased RFS but no difference in OS. This likely reflects selection bias, with surgeons opting to perform more extensive surgery in patients with higher risk disease.

Receptor subtype is associated with type of treatment and overall survival in elderly (≥ 80 years) breast cancer patients. ***Scott Hurton, MD; May Lynn Quan, MD, MSc; Shiying Kong, MSc; Yuan Xu, MD, PhD; Marshall Thibedeau, BSc; Winson Y. Cheung, MD, MPH; Joseph Dort, MD, MSc; Safiya Karim, MD; Trafford Crump, PhD; Antoine Bouchard-Fortier, MD, MSc.* From the Department of Surgery, Cumming School of Medicine, University of Calgary, Calgary, Alta. (Hurton, Quan, Kong, Xu, Dort, Bouchard-Fortier); the Department of Community Health Science, Cumming School of Medicine, University of Calgary, Calgary, Alta. (Quan, Kong, Xu, Cheung, Dort, Karim, Crump, Bouchard-Fortier); the Department of Oncology, Cumming School of Medicine, University of Calgary, Calgary, Alta. (Hurton, Quan, Cheung, Dort, Karim, Bouchard-Fortier); and the Ohlson Research Initiative, Arnie Charbonneau Cancer Institute, University of Calgary, Calgary, Alta. (Dort).**

Background: The treatment and prognosis of breast cancer in women aged 80 years or older is not clearly understood, with variable treatment methods and survival by receptor subtype. Our primary aim was to describe the treatment and overall survival (OS) of breast cancer patients aged 80 years or older. **Methods:** A population-based cohort of women aged 80 years or older with breast cancer was studied between 2004 and 2015 in Alberta. Treatment characteristics and median were stratified by receptor subtype (luminal A/B [LA/B], human epidermal receptor 2 [HER2+], triple negative breast cancer [TNBC] subtypes). **Results:** The mean population age ($n = 2314$) was 85.2 ± 4.3 years; 320 patients (13.8%) were age 90 years or older. The majority of patients underwent surgical treatment (77.9%, Table). More patients with LA/B underwent breast-conserving surgery than patients with HER2+ and TNBC; 43.8%, 50.0%, and 41.5%, respectively, received adjuvant radiation ($p = 0.41$). Palliative hormone treatment was more commonly used in patients with LA/B (12.0%) and HER2+ (12.2%) than in those with TNBC (1.8%), and TNBC patients more often received no treatment than LA/B and HER2+ patients (19.7%, 10.1%, and 10.2%, respectively, $p < 0.01$). Breast cancer–specific mortality in patients with TNBC was greater than patients with LA/B and HER2+ (34.9%, 15.5%, and 26.5%, respectively, $p < 0.001$; Table). The OS (months) was greater in patients with LA/B (64.4, 95% confidence interval [CI] 60.5–69.1) than in patients with HER2 (40.4, 95% CI 26.9–64.8) and TNBC (30.6, 95% CI 25.2–37.8). **Conclusion:** Despite competing mortality risks, a significant proportion of elderly patients die from breast cancer. The majority of breast cancer patients do not receive adjuvant chemotherapy and radiation treatments. As expected, TNBC patients are less likely to receive treatment and more likely to die from breast cancer. Further study on treatment selection is required for elderly patients with breast cancer.

Table: Treatment characteristics and outcomes of women aged 80 years or older diagnosed with breast cancer, stratified by receptor subtype

Characteristic	Group; no. (%) LA/B (n = 1987)	HER2+ (n = 98)	TNBC (n = 229)	*p* value
Surgical treatment				0.003
BCS	655 (33.0)	22 (22.5)	51 (22.3)	
BCS + radiation	287 (43.8)	11 (50.0)	21 (41.2)	
UM	857 (43.1)	54 (55.1)	124 (54.2)	
No Surgery	440 (22.1)	22 (22.5)	49 (21.4)	
Chemotherapy	12 (0.6)	4 (4.1)	16 (7.0)	< 0.001
Palliative hormone therapy	239 (12.0)	12 (12.2)	4 (1.8)	< 0.01
No treatment	201 (10.1)	10 (10.2)	45 (19.7)	< 0.01
Mortality				< 0.001
Overall	1071 (53.9)	46 (46.9)	161 (70.3)	
Breast-cancer specific	308 (15.5)	26 (26.5)	80 (34.9)	< 0.001

BCS = breast-conserving surgery; HER2+ = human epidermal receptor 2; LA/B = luminal A/B; TNBC = triple negative breast cancer; UM = unilateral mastectomy.

Why don't you just operate on this patient? An evaluation of referral patterns for neoadjuvant chemotherapy in breast cancer. ***Don Major, MBBD, DM; Shiying Kong, MSc; Shawn Xu, MD, PhD; Antoine Bouchard-Fortier, MD, MSc; May Lynn Quan, MD, MSc.* From the Department of Surgery, Cumming School of Medicine, University of Calgary, Calgary, Alta. (Major, Kong, Xu, Bouchard-Fortier, Quan); the Department of Community Health Science, Cumming School of Medicine, University of Calgary, Calgary, Alta. (Kong, Xu, Bouchard-Fortier, Quan); and the Department of Oncology, Cumming School of Medicine, University of Calgary, Calgary, Alta. (Bouchard-Fortier, Quan).**

Background: Contemporary indications for neoadjuvant chemotherapy (NAC) are varied and may not be agreed upon by

referring surgeons and medical oncologists. Based on a perceived discordance of appropriate referrals and potential delays for definitive patient treatment, we sought to characterize referral and receipt of NAC to determine if improvements to our referral process could be made. **Methods:** All breast cancer referrals from surgery to the Tom Baker Cancer Centre for NAC between July 2016 and July 2017 were reviewed. Data abstracted included patient demographics, tumour characteristics, and receipt of NAC. Descriptive statistics were used to describe referral patterns and ultimate treatment course. **Results:** Of 162 patients reviewed, 28 (17%) had distant metastases, 24 (15%) were locally advanced, and 8 (0.05%) were for hormonal therapy alone and not included further. The mean age of patients was 55.7 ± 15.8 years. Mean time from diagnosis to surgical consultation, surgical to medical consultation and then time to chemotherapy was 17, 12 and 6 days, respectively. Of the 93 (59%) patients with operable disease, 69 (74%) were lymph node–positive; 38% were luminal A/B, 29% were HER2+ and 33% were triple negative (Table). Overall, 9 (0.06%) patients did not receive NAC, of which only 3 (0.02%) were sent back to the referring surgeon for primary surgery. **Conclusion:** While there may be perceived discordance between referring surgeons and medical oncologists on appropriateness of referred patients, we found the vast majority were of patients were in fact treated with NAC. Further study is required to determine the cause for this discordance.

Table: Referral characteristics for operable locally advanced breast cancer

Characteristic	Node-negative	Node-positive
Luminal A/B	8	26
Her 2 +	8	20
Triple Negative	8	23
Total	24	69