



BOOK OF ABSTRACTS

CAMO 2019 ANNUAL SCIENTIFIC MEETING

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Co-chair: Dr. Samantha Gray

Co-chair: Dr. Lacey Pitre



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ORAL PRESENTATION

Abstract #23_CAMO_2019

BARRIERS TO ACCESSING HEALTHCARE SERVICES: A MULTIDISCIPLINARY APPROACH TOWARDS IMPROVING PANCREATIC CANCER SURVIVAL IN A CANADIAN PROVINCE

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BACKGROUND

Pancreatic cancer (PC) is associated with the highest death rate among common malignancies and is the fourth leading cause of cancer-related death in North America. Despite similar access to treatment options across Canada, the province of Nova Scotia (NS) has the lowest 5-year survival rate for PC. To investigate reasons behind the poor PC outcomes in NS, a multidisciplinary team was created to investigate barriers to care and streamline patient flow. In 2016, initial data informed the reorganization of the hepatopancreaticobiliary (HPB) multidisciplinary team towards the goal of identifying and reducing barriers to care and, ultimately, improving survival.

METHODS

This quality improvement project included a retrospective chart review of PC patient data from a single institution (The NS Cancer Center), where over 80% of PC patients from this province are seen. A review of PC diagnosis, referrals patterns, and wait time data was undertaken.

RESULTS

Data was extracted on 365 patients with a diagnosis of PC between 2011 and 2014. During that period, only 40.4% of patients diagnosed with PC had a tissue diagnosis and just over 71% had a baseline CA19-9. Referral rate to Medical Oncology (MO) was 53%, mean wait time to see MO was 37.2 days and only 23% of patients received systemic treatment. Initiatives to improve access to care included standardization of diagnostic procedures, early triaging of referrals, transfer of port-a-cath (PAC) insertions from interventional radiology to the HPB surgeons, and the creation of provincial guidelines, which were implemented in 2016. Positive Improvements were observed in all identified barriers to care.

	2011-2014 (365 patients)	2017-2018 (134 patients)	% change
Referral to medical Oncology	53.2%	61.9%	+8.7%
Ca19-9 acquired	71.3%	89.9%	+18.6%
Tissue/Cytology Diagnosis	40.4%	82.9%	+42.5%
Received chemotherapy	23.3%	73.9%	+50.6%
Time to See MO	37.18 days (0-93 days)	15.8 days (0-81 days)	-57.5%
Time to see HPB Surgery	19.1 days(0-76 days)	12.4 days (0-33 days)	-35.1%
Time for PAC insertion	Not available as FOLFIRINOX was not used except in 10 patients	10 days	n/a

CONCLUSION

Barriers to accessing care for PC patients in NS were identified, and a multidisciplinary team proposed provincial guidelines were implemented to expedite care. Preliminary results show improvement in all aspects of healthcare delivery. Survival data will be available in late 2019.

ORAL PRESENTATION

Abstract #10_CAMO_2019

FIRST-LINE (1L) IMMUNO-ONCOLOGY (IO) COMBINATION THERAPIES IN METASTATIC RENAL CELL CARCINOMA (mRCC): PRELIMINARY RESULTS FROM THE INTERNATIONAL METASTATIC RENAL CELL CARCINOMA DATABASE CONSORTIUM (IMDC)

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BACKGROUND

In mRCC, ipilimumab and nivolumab (ipi-nivo) is a 1L treatment option. Recent data have also shown efficacy of 1L PD(L)1-VEGF inhibitor combinations. The efficacy of these two strategies has not been compared.

METHODS

Using the IMDC dataset, patients (pts) treated with any 1L PD(L)1-VEGF combination were compared to those treated with ipi-nivo. Multivariable Cox regression analysis was performed to control for imbalances in IMDC risk factors.

RESULTS

164 pts received 1L IO combination therapy: 104 treated with PD(L)1-VEGF combinations and 60 with ipi-nivo. Baseline characteristics and IMDC risk factors were comparable between groups (Table). When comparing PD(L)1-VEGF combinations vs ipi-nivo, 1L response rates (RR) were 30% vs 39% (p=0.29), time to treatment failure (TTF) was 13.2 (95% CI 8.3-16.1) vs 8.5 months (95% CI 5.7-14.0, p=0.31), and median overall survival (OS) was not reached (NR) (95% CI 19.7-NR) vs NR (95% CI 27.6-NR, p=0.39). When adjusted for IMDC risk factors, the hazard ratio (HR) for TTF was 0.77 (95% CI 0.44-1.35, p=0.36) and the HR for death was 0.94 (95% CI 0.33-2.71, p=0.91). Similar results were seen when restricting the cohort to IMDC intermediate/poor risk pts only. In pts receiving subsequent VEGF-TKI monotherapy, second-line (2L) RR (13% vs 45%, p=0.07) and TTF (5.5 vs 5.4 months, p=0.80) for PD(L)1-VEGF combinations (n=15) vs ipi-nivo (n=20) were not significantly different.

CONCLUSIONS

There does not appear to be a superior 1L IO combination strategy in mRCC, as PD(L)1-VEGF combinations and ipi-nivo have comparable RR, TTF and OS. Although there is a trend towards differences in RR, there does not appear to be a significant difference in TTF for patients receiving 2L VEGF-TKI therapy.

	PD(L)1-VEGF (N=104)	Ipi-Nivo (N=60)
IMDC Risk Groups		
Favourable	25/61 (41%)	10/42 (24%)
Intermediate	27/61 (44%)	25/42 (60%)
Poor	9/61 (15%)	7/42 (17%)
IMDC Risk Factors		
KPS < 80	2/89 (2%)	2/57 (4%)
Diagnosis to therapy < 1 yr	58/104 (56%)	30/60 (50%)
Calcium > ULN	7/77 (9%)	8/48 (17%)
Hemoglobin < ULN	35/94 (37%)	25/55 (46%)
Neutrophils > ULN	11/87 (13%)	7/49 (14%)
Platelets > ULN	11/93 (12%)	9/54 (17%)

*All non-significant ($p > 0.05$)

ORAL PRESENTATION

Abstract #27_CAMO_2019**RETROSPECTIVE OUTCOMES ANALYSIS OF PATIENTS WITH UNRESECTABLE STAGE 3 AND 4 CUTANEOUS MELANOMA TREATED WITH SYSTEMIC IMMUNOTHERAPY IN ALBERTA**

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OBJECTIVE

Retrospectively analyze the true overall survival difference between upfront combination CTLA-4/PD-1 treatment versus single agent PD-1 treatment in unresectable stage 3 and 4 cutaneous melanoma.

RATIONALE

Since CTLA-4 checkpoint inhibition is only funded in immunotherapy naïve patients in Alberta, it is generally not used post-failure of single agent PD-1 to confound survival analysis.

METHODS

Data was electronically extracted December 6, 2018 from the Alberta Cancer Registry (ACR), Electronic Medical Records (EMR), Discharge Abstract Database (DAD) and National Ambulatory Care Reporting System (NACRS). All melanoma cancer patients in Alberta diagnosed at age 18 or older since 2008 who received immunotherapy were extracted (n=380 patients). Additional data was manually extracted February 8, 2019 from EMR records for patients receiving combination immunotherapy through Edmonton's Special Access Program (n=34). Individual immunotherapy treatment schemes were manually reviewed. Patients who received single agent CTLA-4 (n=146) or alternate CTLA-4 timing (n=4), had non-cutaneous melanoma (n=37) or had duplicate entries (n=8) were removed. A total of 219 patients remained for analysis; n=80 (36.5%) received combination CTLA-4/PD-1 and n=139 (63.5%) received single agent PD-1. Descriptive statistics were used to describe the study variables. Log rank tests were used to compare KM curves. SPSS version 23 was used for statistical analysis and two-sided p-values were reported.

RESULTS

The 1 and 2 year survival probability for combination CTLA-4/PD-1 was 87.2% and 75.9%. The 1 and 2 year survival probability for single agent PD-1 was 56.1% and 42.6%. P-value <0.0001. Median survival for combination CTLA-4/PD-1 was not reached and for single agent PD-1 was 18.5 months (95% CI: 9.98-26.94).

CONCLUSION

Among immunotherapy naïve unresectable stage 3 and 4 cutaneous melanoma patients, real world data from Alberta shows upfront combination CTLA-4/PD-1 treatment improves survival compared to single agent PD-1 treatment.

ORAL PRESENTATION

Abstract #15_CAMO_2019

THE IMPACT OF GEOGRAPHY AND CENTER VOLUME ON ACCESS TO CARE AND OUTCOMES IN ADVANCED HEPATOCELLULAR CARCINOMA: A RETROSPECTIVE POPULATION BASED STUDY

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OBJECTIVE

The treatment of advanced HCC is complex and requires specialized multidisciplinary care. We aimed to characterize the impact of geography and center volume on access to care and outcomes in HCC patients (pts).

METHODS

Pts diagnosed with HCC who received ≥ 1 cycle of sorafenib at BC Cancer from 2008 to 2016 were included. Patients were stratified by distance from nearest cancer center as a surrogate for rural vs urban status, and by treatment at a high volume vs lower volume center. Chi-square tests and Kaplan Meier curves were used to test for differences between groups.

RESULTS

A total of 288 pts were identified: median age 62 (IQR 56-72), 81% male, 40% Asian, 82% ECOG 0/1, and 90% Child Pugh A. For etiology, hepatitis C (32%), hepatitis B (31%), and alcohol (25%) related liver disease were most common. Nearly half (45%) had baseline AFP ≥ 400 . Most pts resided within 100 km (85%) and 106 (37%) lived within a high volume center catchment area. Ethnicity and liver disease etiology varied by stratification group (table 1). Access to subspecialists were similar between groups stratified by distance (all $p > 0.05$) except those in the rural group were more likely to see an internist ($p = 0.038$). Those within a high volume area were more likely to see a hepatologist (81% vs 44%, $p < 0.001$), hepatobiliary surgeon (67% vs 41%, $p < 0.001$), and/or interventional radiologist (32% vs 20%, $p = 0.03$). Median OS was similar between groups stratified by distance (18.6 vs 19.4 mo, $p = 0.437$). Median OS was higher for the high volume center group (30.2 vs 15.6 mo, $p = 0.001$).

CONCLUSIONS

HCC patients in proximity of a high volume center are more likely to see specialized clinicians and have improved survival outcomes. Further research is needed to better understand social and clinical factors that influence these findings.

Table 1: Baseline Characteristics

	Urban (n=244)	Rural (n=44)	P value	High volume center (n=106)	Lower volume center (n=182)	P value
Age ≥ 65	110 (45%)	17 (39%)	0.428	52 (49%)	75 (41%)	0.196
Male	200 (82%)	34 (77%)	0.463	89 (84%)	145 (80%)	0.368
Asian	112 (46%)	2 (5%)	$<0.001^*$	68 (64%)	46 (25%)	$<0.001^*$
ECOG 0/1	199 (82%)	36 (84%)	0.688	94 (90%)	141 (78%)	0.006*
Child Pugh A	224 (92%)	35 (80%)	0.014*	99 (93%)	160 (88%)	0.172
Hep B+	83 (34%)	5 (11%)	0.003*	54 (51%)	34 (19%)	$<0.001^*$
Hep C+	72 (30%)	20 (46%)	0.037*	28 (26%)	64 (35%)	0.125
Alcohol related	56 (23%)	17 (39%)	0.028*	15 (14%)	58 (32%)	0.001*

ORAL PRESENTATION

Abstract #26_CAMO_2019

PERIOPERATIVE CHEMOTHERAPY ALONE VERSUS PREOPERATIVE CHEMORADIOTHERAPY FOR LOCALLY ADVANCED DISTAL ESOPHAGEAL AND GASTROESOPHAGEAL JUNCTION CANCER: A 10-YEAR REVIEW OF THE BRITISH COLUMBIA (BC) CANCER REGISTRY

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OBJECTIVES

The optimal treatment modality for cancer of the distal esophagus (DE) and gastroesophageal junction (GEJ) remains controversial. This study evaluates patterns of practice in BC, rates of successful surgical resection, and survival outcomes of patients treated with perioperative chemotherapy alone (CA), per MAGIC or FLOT4 protocol, versus preoperative chemoradiotherapy (CRT), per CROSS protocol.

METHODS

We undertook a provincial analysis of initially resectable, locally advanced, cancers of the DE and/or GEJ who underwent surgery in BC, from 2008 to 2018. Baseline patient, tumor, treatment, and clinical outcome data were collected from the BC Cancer Registry. Kaplan-Meier survival and multivariate regression analyses were conducted.

RESULTS

Among 575 patients, 468 underwent surgery. 107 (18.6%) progressed during preoperative therapy and 24 (5%) were found to be unresectable at the time of surgery (Table). More surgeries were aborted in the CA cohort (N= 18, 12%) compared to CRT (N= 6, 2%) (p<0.001). While DE involving GEJ (N = 251, 54%) is treated mostly with CRT (82%), GEJ alone (N=217, 46%) is treated with CRT (53%) and CA (47%) (p<0.001). CRT (59.3%) is a predictor of complete or partial pathologic response compared to CA (38.5%) (p=0.002). R0 resection rate was 90% and 94% in the CA and CRT cohort, respectively (p=0.383). There is no statistically significant difference in overall survival (OS), with medians of 29.6 and 26.0 months for patients treated with CA and CRT, respectively (p=0.723), and this is similar in GEJ only patients (p=0.767). Cancer-specific survival is also not significantly different (p=0.565). In the CA cohort, 37% of patients complete all 8 cycles of FLOT and 52% of patients complete all 6 cycles of MAGIC (p=0.396).

CONCLUSION

Patients treated with CRT have higher rates of successful surgical resection and pathologic response, but their survival is not significantly different compared to those treated with CA.

Table

	Total	Surgery attempted	Surgery completed	Pathologic response
CRT	420	322	316	156 (59.3%)
CA	155	146	128	47 (38.5%)
Total	575	468	444	203 (52.7%)

ORAL PRESENTATION

Abstract #22_CAMO_2019

MINIMIZING DRUG WASTAGE (DW) AND COST OF CABAZITAXEL USED TO TREAT METASTATIC CASTRATE-RESISTANT PROSTATE CANCER (MCRPC)

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INTRODUCTION

Cabazitaxel used in mCRPC is only available in single-dose 60mg vials and has short reconstituted drug stability, resulting in substantial DW and unnecessary cost. We aimed to determine feasibility and cost savings of a batching strategy to facilitate vial sharing.

METHODS

Cabazitaxel 20mg/m² (without GCSF prophylaxis) was administered 3-weekly on Mondays whenever possible. Drug was prepared after patient arrival. Left-over drug was saved for subsequent patients on the same day. Doses administered, discarded (DW) and #vials used were obtained from pharmacy records. All cost calculations were based on market price (\$96.7CAD/mg) accounting for Sanofi’s discount incentive (5 vials for the price of 4). We estimated drug cost without batching by assigning 1 vial/treatment. Drug cost with batching was calculated from the actual #vials used.

RESULTS

Between 09/2015 and 09/2018, 74 patients received 404 Cabazitaxel treatments on 164 days using 322 vials. Patients were batched on 68% treatment days. Batching 3-5 patients saved 1 vial, and batching 6-7 patients saved 2 vials. Average dose/treatment was 37mg (20-45mg). Costs savings are shown below.

# Patients batched	# days	No Batching		Batching		Drug Cost Saved	
		Drug Cost	DW Cost	Drug Cost	DW Cost		
1	53	\$235,561	\$119,229	\$235,561	\$119,229	0	
2	36	\$327,233	\$158,685	\$327,233	\$158,685	0	
3	39	\$536,105	\$257,609	\$372,489	\$31,331	\$163,616	31%
4	24	\$446,758	\$211,193	\$330,718	\$71,945	\$116,040	26%
5	6	\$139,248	\$70,881	\$92,832	\$12,861	\$46,416	33%
6	5	\$139,248	\$67,883	\$92,832	\$9,863	\$46,416	33%
7	1	\$34,820	\$15,665	\$23,208	\$4,061	\$11,612	33%
Total		\$1,879,848	\$721,285	\$1,496,916	\$326,846	\$382,932	20%

CONCLUSION

Batching Cabazitaxel treatments one day per week was feasible and significantly lowered drug costs by reducing wastage. This strategy could also help mitigate costs associated with wastage for other oncology drugs.

ORAL PRESENTATION

Abstract #01_CAMO_2019**DO ALL PATIENTS WITH HER2 POSITIVE BREAST CANCER REQUIRE ONE YEAR OF ADJUVANT TRASTUZUMAB? A SYSTEMATIC REVIEW AND META-ANALYSIS**

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OBJECTIVE

Our objective was to conduct a systematic review and meta-analysis of randomized trials in patients with HER2 positive breast cancer to assess whether a shorter duration of adjuvant trastuzumab was non-inferior to one year of treatment.

METHODS

PubMed, EMBASE and The Cochrane Library were searched for eligible randomized trials. Hazard ratios (HR) for disease free and overall survival (DFS, OS) were weighted using generic inverse variance and pooled in a meta-analysis using random-effects models. The median of non-inferiority margins derived from each trial was calculated to set a non-inferiority margin of 1.29 for the pooled analysis. Subgroup analyses compared survival outcomes by hormone receptor status, nodal status, length and timing of trastuzumab treatment.

RESULTS

Data of 11,376 patients from 5 trials were analyzed. A shorter duration of trastuzumab was non-inferior to one year of therapy for DFS (HR 1.13, 95%CI 1.03-1.24) but worse for OS (HR 1.16, 95%CI 1.02-1.32). In addition, non-inferiority for DFS was met for patients with estrogen receptor (ER) positive disease (HR 1.1, 95%CI 0.95-1.28) and patients treated with 6 months (HR 1.09, 95%CI 0.98-1.22) or sequential trastuzumab (HR 0.97, 95%CI 0.75-1.27). Conversely, non-inferiority for DFS was not met for patients with ER negative disease, node negative disease, and patients treated with 9 weeks or concomitant trastuzumab.

CONCLUSION

Within the limitations of the available data and the different non-inferiority margins used in randomized trials, a shorter duration of adjuvant trastuzumab is non-inferior to one year of therapy in patients with HER2 positive breast cancer for DFS, particularly in patients with ER positive disease. Further trials with appropriately chosen non-inferiority margins are needed to confirm the optimal duration of trastuzumab in patients with low-risk disease.

ORAL PRESENTATION

Abstract #24_CAMO_2019**MEDICAL ONCOLOGY TRAINEES' PERCEPTIONS OF THEIR EDUCATION AND PREPAREDNESS FOR INDEPENDENT PRACTICE**

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OBJECTIVE

To examine Canadian Medical Oncology (MO) residents' perceptions and satisfaction with their educational experience and their preparedness for practice prior to initiation of Competency Based Medical Education (CBME).

METHODS

Digital surveys were sent to MO residents in Canadian training institutions yearly from 2014–2017. Because of lower than expected response rates, invitations were subsequently extended to recent graduates completing training between 2009–2014. Ethics was granted by Queen's University.

RESULTS

A total of 71 surveys were completed (26 residents, 26 recent graduates, 19 unspecified) with representation from 11 training programs.

Usefulness of teaching modalities: Participants ranked learning in a clinical setting as most useful (6.53/8, 1=least useful, 8=most useful) and educational sessions by residents (4.24/8) and Journal Club (3.74/8) as least useful. Most participants felt their training was a shared learner-teacher responsibility (56.1%) or was learner-centered (22.5%).

Quality of teaching by CanMEDs domain: Participants reported similar levels of satisfaction with teaching across domains except for Manager which scored lowest (3.46/5, 1=poor, 5=excellent).

Self-assessment of skills: Participants were most satisfied by their ability to assess their own performance and competence at the end of training (7.16/10, 1=not satisfied, 10= very satisfied). The degree to which their programs set expectations about required knowledge, skills, or attitudes at various points in training (6.63/10) and participants abilities to self-assess these skills during their training (6.64/10) scored slightly lower.

Perceived competence by CanMEDs domain: Participants reported highest perceived competence in the Professional domain (4.63/5, 1=not prepared, 5=well prepared). The lowest ranked domain was Manager (3.72/5) followed by Medical Expert (3.91/5).

CONCLUSION

This survey provides an overview of MO trainees' perceptions of their education and preparedness for practice. A planned follow-up study will assess potential impacts of the transition to CBME training.

POSTER PRESENTATION (MINI-ORALS)

Abstract #04_CAMO_2019**DELIVERY OF BLEOMYCIN AMONG PATIENTS WITH TESTICULAR CANCER: A POPULATION-BASED STUDY OF PULMONARY MONITORING AND TOXICITY**

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INTRODUCTION

Bleomycin is commonly used to treat testicular cancer and can be associated with severe pulmonary toxicity. There is limited information about how clinicians monitor patients during treatment and the incidence of pulmonary toxicity in routine practice.

METHODS

The Ontario Cancer Registry was linked to electronic records of treatment to identify all incident cases of testicular cancer treated with orchiectomy and bleomycin, etoposide, and cisplatin (BEP) chemotherapy in the province of Ontario during 2005-2010. Health-administrative databases were used to describe use of pulmonary function tests (PFTs), chest imaging and physician visits.

RESULTS

475 patients were treated with orchiectomy and chemotherapy. Complete chemotherapy records were available for 93% (368/394) of men treated with BEP. Bleomycin was omitted among 32% (116/368) of patients. PFTs were performed in 17% (63/368), 17% (61/368) and 29% (106/368) of patients before BEP, during BEP, and within 2 years of finishing BEP, respectively. During chemotherapy, 62% of patients (227/368) had chest imaging. In the two years following BEP, 23% (85/368) had a physician visit for respiratory symptoms; this rate was substantially higher among men with greater exposure to bleomycin; 40% (24/60) for 10-12 doses bleomycin vs 21% (53/250) for 7-9 doses vs 14% (8/58) for 1-6 doses (p=0.002). Two percent of men (8/368) had visit codes for pulmonary fibrosis.

CONCLUSIONS

A substantial proportion of men treated with BEP will seek medical attention after chemotherapy for respiratory symptoms and this is associated with cumulative dose of bleomycin. Use of PFTs and chest imaging during treatment is common. Whether PFT test results or clinical symptoms are leading to bleomycin dose omission is uncertain.

POSTER PRESENTATION (MINI-ORALS)

Abstract #13_CAMO_2019**REAL-WORLD OUTCOMES AMONG PATIENTS (PTS) TREATED WITH GEMCITABINE (GEM)-BASED THERAPY POST-FOLFIRINOX (FFOX) FAILURE IN ADVANCED PANCREATIC CANCER (APC)**

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OBJECTIVES

Limited evidence exists for the selection of chemotherapy in APC after first-line (1stL) FFOX. Gemcitabine/nab-paclitaxel (GEMNAB) is publicly funded for second-line (2ndL) use in the provinces of Alberta (AB) and Manitoba (MB), but is not covered in British Columbia (BC). We compared population-based outcomes by region to examine the utility of 2ndL GEMNAB vs. GEM alone.

METHODS

We identified pts treated with 1stL FFOX between 2013-2015 across BC, AB, and MB. Baseline characteristics and treatment regimens were compared between AB/MB and BC. Survival outcomes were assessed by the Kaplan-Meier, and compared with log-rank test.

RESULTS

370 pts treated with 1stL FFOX were identified (145 AB/MB, 225 BC), with a median age of 61y, 42% female, and 68% with metastatic disease (similar in both groups). Receipt of 2ndL therapy was 49% AB/MB vs 44% BC ($p=0.35$), and time from diagnosis to 2ndL therapy measured 7.6 mos AB/MB vs 9.4 mos BC ($p=0.1$). The distribution of 2ndL gemcitabine use was: 72% GEMNAB, 23% GEM in AB/MB vs. 27% GEMNAB, 66% GEM in BC ($p<0.001$). Median overall survival (OS) from diagnosis was similar: 12.4 mos in AB/MB vs. 10.9 mos in BC ($p=0.75$). On Cox regression analysis, region was not significant. A secondary survival analysis by 2ndL regimen demonstrated a median OS of 18.0 mos with GEMNAB vs 14.3 mos GEM ($p<0.01$).

CONCLUSION

In our population-based comparison of APC pts treated with 1stL FFOX, survival outcomes were comparable regardless of publicly funded access to 2ndL GEMNAB vs. GEM. OS by regimen favored 2ndL GEMNAB, but patient selection may be largely responsible for this difference. Randomized trials are needed to demonstrate the benefit of GEMNAB post-FFOX in APC.

POSTER PRESENTATION (MINI-ORALS)

Abstract #02_CAMO_2019**CENTRAL NERVOUS SYSTEM-SPECIFIC EFFICACY OF CDK4/6 INHIBITORS IN RANDOMIZED CONTROLLED TRIALS FOR METASTATIC BREAST CANCER***Long V. Nguyen¹, Katarzyna J. Jerzak¹.*¹*Division of Medical Oncology and Hematology, Odette Cancer Centre, Sunnybrook Health Sciences Centre, Toronto, ON, Canada.***BACKGROUND**

Breast cancer with central nervous system (CNS) metastases carries a poor prognosis as most systemic agents poorly penetrate the blood-brain barrier (BBB). CDK4/6 inhibitors have been shown to cross the BBB in pre-clinical and phase I trials. In phase II/III trials for hormone receptor (HR)+/HER2- metastatic breast cancer, the addition of a CDK4/6 inhibitor to endocrine therapy has nearly doubled the progression-free survival but CNS-specific efficacy is poorly understood.

METHODS

Here, we review unpublished data from phase II/III trials to evaluate the CNS-specific efficacy of CDK4/6 inhibitors in HR+/HER2- metastatic breast cancer.

RESULTS

Relevant studies include 1 ongoing phase II trial (NCT02308020) and 9 published phase II/III trials (MONARCH-1, 2, and 3, MONALEESA-2, 3 and 7, and PALOMA 1, 2, and 3). Though preliminary, results from NCT02308020 demonstrated a durable partial response in 2/23 (8.7%) patients treated with Abemaciclib (5.74 months and beyond 11.47 months, respectively), whereas another 15 (65.2%) patients had stable brain metastases for at least 6 months; this translates into a clinical benefit rate of 74%. In PALOMA-2, 2/666 patients (0.3%) had brain metastases that were previously treated and stable (1 patient in each arm); neither had CNS progression. New brain metastases developed in 5/444 patients (1.1%) in the Palbociclib arm and 4/222 (1.8%) in the placebo arm. In PALOMA-3, 5/521 patients (1.0%) had brain metastases; 1/1 patient in the placebo arm and 1/4 patients in the Palbociclib arm demonstrated CNS progression. Other trials excluded patients with brain metastases and/or did not assess the CNS as a site of progression.

CONCLUSIONS

Limited available data suggests some CNS-specific efficacy of CDK4/6 inhibitors. Broadening trial eligibility to include patients with brain metastases will help guide clinical practice and the design of future studies.

POSTER PRESENTATION (MINI-ORALS)

Abstract #08_CAMO_2019**TIMING AND COMPLETION RATES OF ADJUVANT CHEMOTHERAPY FOLLOWING DEFINITIVE SURGERY FOR PANCREATIC HEAD ADENOCARCINOMA**

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BACKGROUND

Prognosis of resectable pancreatic adenocarcinoma improves with the use of adjuvant chemotherapy, however the importance of timing and chemotherapy completion is not well understood.

METHODS

A cohort analysis was performed on patients who underwent pancreatic resection for ductal adenocarcinoma from a single tertiary hospital between 2007 and 2016. Patients who completed adjuvant chemotherapy were compared to those who did not. Overall survival (OS) and disease-free survival (DFS) were assessed using a Cox proportional hazards model adjusting for confounding variables. A logistic regression analysis was performed to evaluate what factors may influence adjuvant chemotherapy completion rates following resection.

RESULTS

The cohort included a total of 150 patients eligible for chemotherapy, 98 received adjuvant chemotherapy with 54 completing treatment. DFS at 1-year was significantly improved with completing chemotherapy (HR 0.225, $p < 0.01$). However, this effect was not seen for overall DFS (HR 0.901, $p = 0.76$). There were no differences in 1-year survival (HR 0.997, $p = 0.99$) or OS (HR 0.993, $p = 0.98$) between these groups. Chemotherapy completion rates decreased with increasing age ($p < 0.01$) and improved in patients receiving adjuvant radiation ($p < 0.01$). Peri-operative complications, pancreatic fistula and length of stay did not have a significant impact on chemotherapy completion rates. The median time from surgery to chemotherapy was 64 days, and this did not impact DFS or OS. Sub-group analysis showed chemotherapy completion improved with adjuvant radiation (OR 4.31, $p = 0.001$), however, these patients had a reduced 1-year DFS ($p < 0.01$).

CONCLUSION

Completion adjuvant chemotherapy following pancreaticoduodenectomy for ductal adenocarcinoma appears to have an early and non-sustained DFS benefit. Despite incomplete treatment, survival did not appear to be adversely affected. Our current sample size suggest that complete and partial adjuvant chemotherapy have similar long-term benefits. Our findings that adjuvant radiation increases chemotherapy completion but also the risk of death at 1 year is likely related to a selection bias of R1/R2 disease and patients at high risk for early local recurrence.

POSTER PRESENTATION (MINI-ORALS)

Abstract #18_CAMO_2019**THE INFLUENCE OF ADJUVANT CHEMOTHERAPY DOSE INTENSITY ON FIVE YEAR OUTCOMES IN RESECTED COLON CANCER**

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BACKGROUND AND METHODS

There is evidence that achieving a dose intensity > 70 - 80% in adjuvant colon cancer treatment improves survival. 192 consecutive patients with resected stage III colon cancer that received adjuvant chemotherapy at a tertiary referral center were retrospectively analysed. Patients who received at least 6 weeks of adjuvant therapy were included. The primary objective was to assess the influence of dose index (DI) and relative dose intensity (RDI) on DFS and OS at 3 and 5 years in patients receiving fluorouracil-based doublet therapy with oxaliplatin (FU-OX), or capecitabine monotherapy. FU-OX regimens, CAPOX and FOLFOX, were not compared as a vast majority of patients received FOLFOX.

RESULTS

66% of patients received FU-OX, while 34% received capecitabine alone. In the capecitabine group, DFS rates for 3 and 5 years were 69.3% and 64.2% respectively while OS rates were 93.4% and 87.3% respectively. Similarly, those in the FU-OX group showed DFS rates of 78.2% and 72.4% in 3 and 5 years, respectively. Overall survival rates with FU-OX were 98.4% and 95.5% at 3 and 5 years, respectively. Median RDI was 74% for capecitabine and 77% and 86% for the oxaliplatin and FU components within FU-OX, respectively. There was no significant difference in DFS or OS when comparing patients who achieved an RDI of above versus below the median or cut-offs at 70 or 80%. There was also no difference in DFS or OS based on DI.

CONCLUSION

There was no significant difference in outcomes based on RDI or DI in a retrospective analysis of 192 patients that received chemotherapy for stage III resected colon cancer. Considering the evidence of the IDEA collaboration, pooling data from multiple institutions to examine the influence of RDI and DI on outcomes would be warranted, specifically with CAPOX and FOLFOX regimens.

POSTER PRESENTATION (MINI-ORALS)

Abstract #17_CAMO_2019**BREAST CONSERVING SURGERY FOR LOCALLY ADVANCED BREAST CANCER***Roochi Arora, Erika Lee, Ghazaleh Kazemi**Juravinski Cancer Centre**Department of Oncology**McMaster University*

Traditional management of locally advanced breast cancer (LABC) includes neoadjuvant chemotherapy followed by mastectomy and radiation. Over time the definition of LABC has evolved and responses to systemic treatment have improved to the point where breast conserving surgery (BCS) may be considered. At the 2016 LHIN4 Day in Breast Cancer conference, regional consensus guidelines were established for identifying patients who could be offered BCS. Improved cosmetic outcomes, reduced postoperative complications and reduced health care costs are major advantages of BCS over mastectomy. The purpose of this study was to determine if the established consensus guidelines on BCS for LABC changed practice. A retrospective chart review was performed of all patients with LABC treated at the Juravinski Cancer Centre with neoadjuvant chemotherapy followed by surgery between June 2015-June 2017. A two-sided chi-square test was used to determine if the difference between proportions of those who underwent BCS before and after the LHIN4 Day was statistically significant. 210 patients were included in this study, with a median age of 52.8. A non-significant trend of increased rates of BCS after the LHIN4 Day was observed (5.4% vs 1.6%, $p=0.29$). Although preoperative clip insertion was a recommendation for offering BCS, no patients in our review received this. This deficiency in our current system will be of growing concern as emerging evidence is increasingly suggesting that neoadjuvant therapy also be offered to early stage Her2 positive and triple negative breast cancer patients. Pathologic complete response was achieved in 16.7% of all patients, and 88% of patients received neoadjuvant dose dense ACT chemotherapy. Overall, no significant change was observed in the rates of BCS before and after the establishment of local consensus guidelines. However, the lack of preoperative clip insertion must be addressed given the expected increase in the use of neoadjuvant therapy for breast cancer.

POSTER PRESENTATION (RESIDENTS/FELLOWS/MEDICAL STUDENTS)

Abstract #25_CAMO_2019

RELATIONSHIP BETWEEN PET RESPONSE AND PATHOLOGIC RESPONSE IN DISTAL ESOPHAGEAL/GASTROESOPHAGEAL JUNCTION CANCERS: A PROVINCIAL POPULATION-BASED ANALYSIS

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OBJECTIVES

The utility of PET scans (PETs) to predict outcomes after neoadjuvant treatment of DE/GEJ cancers is unclear. We aimed to explore the relationship between PET response and pathologic/clinical outcomes in a real-world setting.

METHODS

Patients (pts) diagnosed with DE/GEJ cancer treated with perioperative chemotherapy or neoadjuvant chemoradiation in British Columbia were included. Retrospective chart review was conducted; pts were stratified into PET responders (PET-R, $\geq 35\%$ decrease in max SUV) or PET non-responders (PET-NR, $< 35\%$) groups. Chi-square and Kaplan Meier were used to test for associations between variables and outcomes.

RESULTS

Of 576 pts identified, 299 (52%) underwent PETs before neoadjuvant treatment and surgery; 232 (78%) proceeded to surgery and were included for analysis. Treatment regimens comprised of CROSS (72%), MAGIC (24%) and FLOT (4%). Median age was 66 (IQR 57-72), 85% male, 91% ECOG 0/1, 62% GEJ involvement, and 81% adenocarcinoma histology. Characteristics were balanced between the PET-R and PET-NR groups (all $p > 0.05$). Median time from end of treatment to PETs was 30 days (IQR 22-36); 67% were PET-R. Pathologic complete response rate (14% vs 13%, $p = 0.079$) and ypT0-1 (31% vs 37%, $p = 0.172$) rate were similar for PET-R vs PET-NR, respectively. Discordance rate was 34% between PET vs pathologic response (table 1). Aborted surgery rate was higher in the PET-NR group (8% vs 3%, $p = 0.03$); 70% of aborted cases were due to peritoneal involvement. Median overall survival was similar between the groups (PET-R 31.5 mo vs PET-NR 36.1 mo, $p = 0.616$).

CONCLUSIONS

In our population-based cohort, PET response did not predict for pathologic complete response rate or overall survival, but non-responders were more likely to have their surgeries aborted. Further studies looking at the prognostic and predictive use of PETs are warranted.

Table 1: Discordance Rates

	Definition	N	%
Primary Tumour Discordance	PET-R (decrease in SUV $\geq 35\%$) Pathologic stage ypT3 or higher	64/232	27.6%
Nodal Discordance	Node negative on PET Pathologic stage ypN2 or higher	33/232	14.2%
Primary Tumour and/or Nodal Discordance	As above	79/232	34.1%

POSTER PRESENTATION (RESIDENTS/FELLOWS/MEDICAL STUDENTS)**Abstract #16_CAMO_2019****MEDICAL ONCOLOGIST PERSPECTIVES ON THE OUTCOMES OF THE IDEA COLLABORATION**

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OBJECTIVE

We aimed to characterize the real-world uptake of the IDEA Collaboration data and prescribing patterns of adjuvant FOLFOX/CAPOX in stage III colorectal cancer.

METHODS

A list of questions developed by 4 medical oncologists regarding the views of physicians who treat GI cancers toward the IDEA collaboration results were formulated and distributed using an online survey. Descriptive statistics and chi-square tests were utilized to summarize information.

RESULTS

Of 165 responses, 138 were complete and included for analysis. Responses originated from South America (55%), Canada (25%), Asia (7%), Australia/Oceania (7%) and United States (4%); 59% have been in practice for ≥ 10 years, and practice settings were balanced (academic 34% vs. community 30% vs. both 36%). Prior to IDEA, FOLFOX was preferred over CAPOX (83 vs. 17%) except in Asia (40 vs. 60%, $p < 0.05$). Subsequent to IDEA, rates of preference for CAPOX increased (52 vs. 48% for FOLFOX), which was consistent across prescriber location, gender, practice setting, and practice duration (all $p > 0.05$). The preferred approach is 3 mo for T1-3N1 disease (67%); however 30% of prescribers continue to consider the standard of care as 6 mo, and 3% consider 3 mo as standard stage III tx. Those from Australia and Canada are more likely to tailor duration based on disease risk (89% and 78%, $p < 0.05$ vs. other locations). Following IDEA, more oncologists (77%) are willing to discontinue oxaliplatin early if toxicities develop. Half of responders (49%) found the IDEA trial increased their confidence in decision making for adjuvant tx; 36% were unchanged and 15% indicated decreased confidence.

CONCLUSIONS

Prior to IDEA, most oncologists preferred FOLFOX but real world survey data shows a shift in preference favoring CAPOX. The majority of clinicians are now prescribing 3 months of adjuvant tx for low risk stage III cancers and are more willing to discontinue oxaliplatin early.

POSTER PRESENTATION (RESIDENTS/FELLOWS/MEDICAL STUDENTS)

Abstract #11_CAMO_2019**PERSISTENT IMMUNE-RELATED ADVERSE EVENTS AFTER IMMUNE CHECKPOINT INHIBITOR THERAPY***Cameron R Giles¹, Carly C Barron², Elaine McWhirter³*¹*Faculty of Medicine, McMaster University, Hamilton, Ontario, L8S 4L8*²*Department of Medicine, McMaster University, Hamilton, Ontario, L8S 4L8*³*Department of Oncology, McMaster University, Hamilton, Ontario, L8S 4L8*

Treatment with immune checkpoint inhibitors leads to improved progression-free and overall-survival in a number of cancers. Unfortunately, the non-specific immune response induced by these agents also leads to immune-related adverse events (irAEs), which may persist despite withholding immunotherapy and/or treatment with immunosuppressive and immunomodulating medications. There is little data in the literature on these prolonged non-endocrine irAEs.

We performed a retrospective chart review to identify patients who experienced persistent irAEs (>6 months). We describe preliminary results of six patients meeting our inclusion criteria.

One patient with metastatic pancreatic adenocarcinoma was treated with tremelimumab + durvalumab and developed grade 3 hepatitis refractory to treatment with oral/intravenous steroids and mycophenolate. Two patients with metastatic melanoma were treated with nivolumab and nivolumab + ipilimumab, respectively. The first developed grade 3 dermatitis, then grade 3-4 arthritis that persisted after treatment with oral/intra-articular steroids and sulfasalazine. The second developed grade 3 colitis that was treated with intermittent oral/intravenous steroids over a three-year period, which eventually resolved. One patient with unresectable stage IIIC melanoma treated with pembrolizumab developed grade 3 peripheral neuropathy that persisted despite oral steroid treatment. Two patients with metastatic lung adenocarcinoma were treated with nivolumab and pembrolizumab, respectively. The first developed grade 2 arthritis that persisted despite oral/intra-articular steroids and hydroxychloroquine. The second developed grade 2 mucositis and grade 4 dermatitis, with multiple unsuccessful oral steroid tapers due to repeated symptom flares. Four out of these six patients experienced morbidity related to the immunosuppressive medications used to treat their irAEs.

Our initial experience suggests there are a subset of patients receiving immunotherapy who experience prolonged irAEs. These events are challenging to clinically manage and may lead to patient morbidity. Further research is required to characterize this population and learn to best manage their toxicities.

POSTER PRESENTATION (RESIDENTS/FELLOWS/MEDICAL STUDENTS)**Abstract #05_CAMO_2019****VOLUME OF SYSTEMIC CANCER THERAPY DELIVERY AND OUTCOMES OF PATIENTS WITH SOLID TUMORS: A SYSTEMATIC REVIEW AND METHODOLOGIC EVALUATION OF THE LITERATURE**

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BACKGROUND

Patients undergoing complex cancer surgery have better outcomes when care is provided by high-volume surgeons and hospitals. It is not known whether this volume-outcome relationship extends to the systemic treatment of solid tumors.

METHODS

Two authors independently reviewed all studies that were potentially eligible for inclusion. Where necessary, study authors were contacted to obtain additional information. Studies were not assigned a quality score. Elements of the scoring system proposed by Institute of Medicine to evaluate surgical volume-outcome studies and the recommendations by Livingston and Cao to evaluate the statistical rigor of volume-outcome studies were used to evaluate the methodologic rigor of the available evidence.

RESULTS

Sixteen studies including 441,890 patients were included. Cancer sites evaluated were testicular (N=7), lung (N=2), melanoma (N=2), renal cell (N=2), pancreas (n=1), esophagogastric (N=1), and cholangiocarcinoma (N=1). Most studies adjusted for age (N=14) and stage of disease (N=14), but few did so for patient comorbidities (N=7) or performance status (N=1). Most studies evaluated volume as a categorical variable (N=13) and used single-level regression (N=11). No study provided an estimate of the relative contribution of volume to the variance in survival observed. Patients treated at high-volume centers were younger, more affluent, more educated, from urban areas, and were more likely to have private insurance. Fourteen of 16 studies concluded that increasing volume was associated with better survival. The unadjusted, absolute improvement comparing the lowest to highest volume categories ranged from 1% to 24%.

CONCLUSIONS AND RELEVANCE

The available evidence suggests that volume of systemic therapy provision for solid tumors may be associated with improved survival. However, each study identified in this review contains such considerable methodologic shortcomings and/or unresolved confounding that estimation of an unbiased treatment effect is not possible. Prior to implementation of regionalization policies further high quality research is needed.

POSTER PRESENTATION (RESIDENTS/FELLOWS/MEDICAL STUDENTS)**Abstract #14_CAMO_2019****UPTAKE AND IMPACT OF ONLINE RESOURCES IN WOMEN WITH BREAST CANCER: A PILOT SURVEY-BASED RESEARCH STUDY**

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OBJECTIVE

This pilot study sought to characterize online resource use among women newly diagnosed with breast cancer.

METHODS

We surveyed 27 women referred to medical oncology at CancerCare Manitoba for a new breast cancer diagnosis. Participants completed a brief survey before their initial consultation, where they were asked about their Internet usage and their reason(s) for consulting online resources. They were also asked if they anticipated specific treatment recommendations. After the visit, we asked participants to complete a brief follow-up questionnaire to determine what information source best prepared them for the treatment recommendations.

RESULTS

Participant age ranged from 33 to 79 (mean age 56). Two thirds (63%) were from urban locations. Twenty participants (74%) consulted the Internet about breast cancer prior to their medical oncology consultation. There was no association between age or rurality and consulting the Internet. Nineteen (70%) patients thought they knew which treatment(s) would be recommended; there was no association between this and Internet use. Of these 19 patients, 15 (79%) expected to be recommended chemotherapy, while only 11 (58%) were actually recommended chemotherapy. No patient who was not expecting chemotherapy was recommended chemotherapy. Only 21% of participants indicated that the Internet was the most helpful resource. Among those who found online information at all helpful, the majority (62%) rated official cancer/medical society websites as most valuable. Only one patient refused treatment. She cited a website that promotes alternative cancer treatments and strongly opposes conventional cancer therapies as the most valuable resource.

CONCLUSION

The majority of women newly diagnosed with breast cancer will consult online resources regarding their diagnosis, with official cancer/medical society websites rated most highly. However, online misinformation remains a concern.

POSTER PRESENTATION (RESIDENTS/FELLOWS/MEDICAL STUDENTS)

Abstract #03_CAMO_2019**DUCTAL CARCINOMA IN SITU (DCIS) AND INVASIVE BREAST CANCER (IBC) INCIDENCES IN NL AS COMPARED TO THE REST OF ATLANTIC CANADA**

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In Newfoundland and Labrador, there is limited data on the incidence of DCIS, providing the rationale for this study. Current diagnosis derives from high risk groups that are detected by mammography or by screening breast MRI. The objective of this study was to determine whether there is any difference in the proportion of DCIS to invasive breast cancer in the NL population vs the rest of Atlantic Canada from the years of 2003 to 2013. A retrospective cohort study was performed using patients with histologically confirmed DCIS or IBC using the provincial and territorial cancer registries (PTCRs), as well as the Canadian Cancer Registry (CCR). For incidence of total IBC, the CCR was assessed using CANSIM software. For determination of incidence of DCIS, individual PTCRs were contacted for new pure DCIS cases from 2003 to 2013. According to the Newfoundland and Labrador (NL) cancer registry, there has been an exponential increase in the number of newly diagnosed cases of DCIS since 1969. If trends continue, there could be as many as 100 new cases of DCIS diagnosed by 2020. After using regression analysis for each Atlantic province, it is shown that NS has the lowest incidence of DCIS that is reported in Atlantic Canada (average of 6.5% of new breast cancer diagnosis), however interestingly they also have the highest incidence of IBC. Newfoundland and Labrador (NL) has the fastest growing incidence of DCIS in Atlantic Canada according to regression analysis ($y = 7E-87e^{0.0995x}$, $R^2 = 0.3417$). NL also has the only increasing incidence rate of IBC in the Atlantic provinces. All other Atlantic provinces have a decrease in the incidence of IBC over the period of 2003-2013. This study shows that DCIS incidence is quickly on the rise in Atlantic Canada.

POSTER PRESENTATION (OTHER)

Abstract #12_CAMO_2019

THE EFFECTS OF IMMUNOTHERAPY AND NOVEL THERAPIES ON MEDICAL ONCOLOGY WORK LOAD IN A CANADIAN PROVINCE

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BACKGROUND

Both novel targeted therapies and immunotherapies have dramatically changed the landscape in a number of disease sites with previously limited treatment options. This has resulted in an impact on clinical workload for oncologists with subspecialty practices in the areas of non-small cell lung, (NSCLC), melanoma (M), and genitourinary (GU) cancer. Our aim was to investigate the shift in workload amongst these practices as compared to other disease sites within a single academic cancer center in Nova Scotia (NS), Canada.

METHODS

The NS Cancer Center is the academic cancer center for the province of NS providing consultative and ongoing care for approximately 72% of provincial patients. We manually quantified appointment visits (new consultation, treatment and follow up visits) as well as telephone toxicity and chart checks booked from February 1 to April 30 across a 3-year interval (2016, 2017, and 2018) and then extrapolated this data to derive full year estimates. Disease sites most impacted by therapies that have changed treatment landscape (NSCLC, M and GU) were compared with the Breast and Gastrointestinal disease sites.

RESULTS

Clinical workload increased across all domains over the 3 year period but the majority of the increase is attributed to the 3 disease sites (Table 1).

	3 months			1 year Estimates			% increase 2016 - 2018
	2016	2017	2018	2016	2017	2018	
Combined cohort:							
Teletoxicity	150	145	228	600	580	912	52%
Chart Review	1409	1495	1737	5636	5980	6948	23.3%
Consultations	514	560	554	2056	2240	2216	7.8%
Follow up visits	2175	2216	2505	8700	8864	10020	15.1%
NSCLC/M/GU:							
Teletoxicity	93	85	181	372	340	724	94.6%
Chart Review	924	948	1225	3696	3792	4900	32.6%
Consultations	219	251	287	876	1004	1148	31.1%
Follow up visits	1104	1149	1524	4416	4596	6096	38.0%
GI/Breast:							
Teletoxicity	57	60	47	228	240	188	-17.5%
Chart Review	485	547	512	1940	2188	2048	5.6%
Consultations	295	309	267	1180	1236	1068	-9.5%
Follow up visits	1071	1067	981	4284	4268	3924	-8.4%

CONCLUSIONS

Medical oncology workloads are increasing over time and novel treatments (including immunotherapy) in disease sites with previously limited options likely account for a significant portion of that increase. New patient consultation metrics, taken in isolation, do not reflect current trends in medical oncology workload. Hiring practices, space allocation and use of physician extenders must take into account these shifting workload dynamics to mitigate physician burnout and potential impacts on quality and timeliness of care.

POSTER PRESENTATION (OTHER)

Abstract #06_CAMO_2019**CLINICAL PRACTICE PATTERNS ON THE USE OF ADJUVANT BISPHOSPHONATE FOR EARLY BREAST CANCER: A CANADIAN PERSPECTIVE**

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OBJECTIVES

To better characterize how Canadian medical oncologists (MOs) use ABPs and whether practice patterns are concordant with the CCO/ASCO guideline.

METHODS

A brief survey was circulated by e-mail to 618 Canadian MOs between Nov 2017-May 2018. Questions were designed to gather data on demographics, patient selection, choice of bisphosphonate, schedule/duration of treatment and barriers to use. No incentive was provided.

RESULTS

Sixty-eight MOs from 8 Canadian provinces completed the survey (response rate 11.0%). Most practiced in Ontario (65.7%) and just over half (51.5%) were community oncologists. MOs offered ABPs to 52.2% of menopausal women with EBC. Use was higher in the community compared to the academic setting ($p=0.049$). Most used zoledronic acid (85.3%) every 6 months (95.6%) for 3 years (69.1%) and started treatment within 3 months of completing adjuvant chemotherapy/radiation (67.7%). Factors associated with use of ABPs were: high Oncotype Dx score (89.1%), high tumor grade (72.1%), triple negative disease (63.6%), osteoporosis (87.7%)/osteopenia (83.9%) and use of aromatase Inhibitor (75.0%). The most common factor precluding use of ABPs was presence of comorbidities (89.7%). About 1/3rd indicated they would offer ABPs to women with stage I HR positive/Her2 negative EBC.

CONCLUSION

Canadian MOs have added intravenous ABPs to their armamentarium of therapies in keeping with the spirit of the recent guideline. High-risk disease features and low bone density appear to be influencing the decision-making process. Further work aimed at identifying those patients who are unlikely to benefit from treatment is needed.

POSTER PRESENTATION (OTHER)**Abstract #09_CAMO_2019****IMPLEMENTATION OF COMPETENCY BASED MEDICAL EDUCATION IN A CANADIAN MEDICAL ONCOLOGY TRAINING PROGRAM: LESSONS FROM OUR FIRST YEAR**

Anna Tomiak, Geordie Linford, Micheline McDonald, Jane Willms, Nazik Hammad. Department of Oncology, Queen's University, Kingston, Ontario

OBJECTIVE

To share observations and experiences from the first year of Competency Based Medical Education (CBME) implementation at Queen's University.

METHODS

Assessment metrics were obtained through MEdTech, the electronic platform for assessment capture at Queen's University. Ethics was granted by Queens University as part of an ongoing research study on feedback. Lessons learned were compiled from discussions between the Program Director, Residents, Program Administrator, CBME Education Consultant and CBME lead.

RESULTS

A total of 179 assessments were completed between July 2017 and December 2018. 89% were Entrustable Professional Activity assessments and the remainder were based on multisource feedback, rubrics and field notes. The median number of assessments per faculty was 16 (1-42). 52% of assessments included written "Comments" or "Next steps". A median of 6 assessments per faculty member included specific or actionable feedback.

Lessons learned centered on:

- 1) Faculty and Resident development and engagement (critical investments before, during and after implementation);
- 2) Value of sharing work of CBME (CBME Education Consultant, CBME Lead, Academic Advisors, Competence Committee);
- 3) Importance of collaboration and communication (Division, institutional, national levels);
- 4) Evolving culture change in medical education;
- 5) Resident concerns regarding lack of global assessment;
- 6) Assessment plan challenges (How many observations required?);
- 7) Burden of CBME (Resident driven assessments or a better balance?);
- 8) Limitations of e-portfolio (How to live track and by whom?);
- 9) Costs.

CONCLUSIONS

Our first year of implementation was successful in introducing CBME concepts, work based assessments and e-portfolios. Ongoing work is needed, including increasing the number of assessments and quality of feedback.

POSTER PRESENTATION (OTHER)

Abstract #07_CAMO_2019**DEVELOPING A FRAMEWORK FOR THE INCORPORATION OF REAL-WORLD EVIDENCE INTO CANCER DRUG FUNDING DECISIONS IN CANADA: AN UPDATE FROM THE CANADIAN REAL-WORLD EVIDENCE FOR VALUE OF CANCER DRUGS (CANREVALUE) COLLABORATION**

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OBJECTIVE

The CanREValue collaboration is a multi-year, multi-stakeholder initiative funded by the Canadian Institutes of Health Research to develop a framework for the generation and use of real-world evidence (RWE) for cancer drugs to enable: (i) reassessment of cancer drugs by recommendation-makers; and (ii) refinement of funding decisions or renegotiations/reinvestment by Canadian decision-makers/payers.

METHODS

The collaboration has established 5 working groups (WG) to focus on different aspects of the CanREValue framework. The **RWE planning and drug selection WG** will recommend criteria to identify potential candidates for real world evaluation and advise on the necessary provincial infrastructure needed for RWE. The **RWE Data WG** will recommend strategies for data access and harmonization of data elements relevant for RWE studies across provinces. The **RWE Methods WG** will recommend methods to analyze real world data with methodological rigor. The **RWE Uptake and Reassessment WG** will advise on strategies to use RWE results for HTA reassessment. The **RWE Engagement WG** will establish mechanisms to inform key stakeholders on the draft recommendations from the WGs and obtain stakeholder feedback for consideration by the WGs as recommendations are developed in an iterative process. Each WG will employ a range of tools, including teleconferences, face-to-face meetings, webinars and surveys to engage stakeholders, including clinicians, patient groups, pharmaceutical companies and payers. To reach medical oncologists, the RWE Engagement WG will provide CAMO members with updates through the Association's newsletter, seek input to WG recommendations through surveys, and engage a core group of oncologists active in the pCODR drug review process.

CONCLUSION

CanREValue is a multi-stakeholder initiative to provide recommendation- and decision-makers with advice on a framework for the conduct and use of RWE for oncology drugs. As the prescribers of oncology products, medical oncologists should be aware of CanREValue and avail themselves of opportunities to shape the recommendations.