BOOK OF ABSTRACTS
CAMO 2018 ANNUAL SCIENTIFIC MEETING

Thursday, April 26, 2018

Co-chair : Dr. David Dawe
Co-chair : Dr. Jean-Pierre Ayoub
# TABLE OF CONTENT

## ORAL PRESENTATIONS

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>52_CAMO_2018</td>
<td>PLASMA MIR371 FOR THE DETECTION OF Viable Germ Cell Tumor</td>
<td>Lucia Nappi</td>
<td>1</td>
</tr>
<tr>
<td>42_CAMO_2018</td>
<td>DETERMINING BIOMARKERS OF RESPONSE TO DOCETAXEL FOR PATIENTS WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (MCRPC) USING CIRCULATING CELL-FREE TUMOR DNA (CTDNA)</td>
<td>Daniel Khalaf</td>
<td>2</td>
</tr>
<tr>
<td>29_CAMO_2018</td>
<td>ABSTRACT NOT PUBLISHED</td>
<td>Steven Yip</td>
<td>3</td>
</tr>
<tr>
<td>16_CAMO_2018</td>
<td>POPULATION BASED ANALYSIS OF MALE PATIENTS WITH BREAST CANCER IN ALBERTA</td>
<td>Osama Ahmed</td>
<td>4</td>
</tr>
<tr>
<td>47_CAMO_2018</td>
<td>POTENTIAL LIFE-YEARS LOST: THE IMPACT OF THE CANCER DRUG REGULATORY PROCESS IN CANADA</td>
<td>Joanna Gotfrit</td>
<td>5</td>
</tr>
<tr>
<td>05_CAMO_2018</td>
<td>OUTCOMES AND CHARACTERISTICS OF PATIENTS RECEIVING SECOND-LINE THERAPY FOR ADVANCED PANCREATIC CANCER</td>
<td>Erica Tsang</td>
<td>6</td>
</tr>
<tr>
<td>44_CAMO_2018</td>
<td>WHOLE GENOME SEQUENCING IN METASTATIC BREAST CANCER – LESSONS LEARNED FROM THE BC CANCER PERSONALIZED ONCOGENOMICS PROGRAM</td>
<td>Nathalie LeVasseur</td>
<td>7</td>
</tr>
<tr>
<td>01_CAMO_2018</td>
<td>SCREENING FOR NEW PRIMARY CANCERS IN PATIENTS WITH METASTATIC BREAST CANCER: A PROVINCIAL ANALYSIS OF THE CHOOSING WISELY CANADA RECOMMENDATIONS</td>
<td>Megan Tesch</td>
<td>8</td>
</tr>
</tbody>
</table>

## POSTER PRESENTATIONS (MINI-ORALS)

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>04_CAMO_2018</td>
<td>HEALTH RELATED QUALITY OF LIFE IN ELDERLY OR FRAIL PATIENTS WITH ADVANCED COLORECTAL CANCER TREATED WITH DOSE REDUCED CAPECITABINE</td>
<td>Daniel Breadner</td>
<td>9</td>
</tr>
<tr>
<td>20_CAMO_2018</td>
<td>NEOADJUVANT CHEMOTHERAPY (NC) PRIOR TO TRIMODALITY THERAPY (TMT) FOR MUSCLE-INVASIVE BLADDER CANCER (MIBC) PATIENTS UNDERGOING A BLADDER SPARING APPROACH</td>
<td>Di (Maria) Jiang</td>
<td>10</td>
</tr>
<tr>
<td>10_CAMO_2018</td>
<td>BALANCING THE RISKS VERSUS BENEFITS OF TRASTUZUMAB: A CALL TO ACTION FOR ONCOLOGISTS, CARDIOLOGISTS AND CARDIO-ONCOLOGISTS</td>
<td>Moira Rushton-Marovac</td>
<td>11</td>
</tr>
<tr>
<td>26_CAMO_2018</td>
<td>ADJUVANT THERAPY USE AND OUTCOMES OF STAGE II AND III COLORECTAL CANCER (CRC): COMPARISON OF YOUNG AND ELDERLY PATIENTS IN A LARGE, CONTEMPORARY, POPULATION-BASED CANADIAN DATABASE</td>
<td>Haider Samawi</td>
<td>12</td>
</tr>
<tr>
<td>36_CAMO_2018</td>
<td>THE CLINICAL UTILITY OF BASELINE CARDIAC ASSESSMENTS PRIOR TO ADJUVANT ANTHRACYCLINE CHEMOTHERAPY IN BREAST CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS</td>
<td>Pierre O’Brien</td>
<td>13</td>
</tr>
<tr>
<td>15_CAMO_2018</td>
<td>INFLUENCE OF AGGRESSIVE-VARIANT PROSTATE CANCER (AVPC) FEATURES ON OUTCOME OF METASTATIC HORMONE-SENSITIVE PROSTATE CANCER (MSPHPC) TREATED BY CHEMOHORMONAL THERAPY (CHT)</td>
<td>Kim Koczka</td>
<td>14</td>
</tr>
</tbody>
</table>
## TABLE OF CONTENT

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>02_CAMO_2018</td>
<td>INCIDENCE OF BRAIN METASTASES IN PRIMARY AND METASTATIC BREAST CANCER</td>
<td>Adam Komorowski</td>
<td>15</td>
</tr>
<tr>
<td>03_CAMO_2018</td>
<td>MEDICAL ASSISTANCE IN DYING (MAID): THE OPINIONS OF MEDICAL TRAINEES IN NEWFOUNDLAND AND LABRADOR</td>
<td>Robert McCarthy</td>
<td>16</td>
</tr>
<tr>
<td>06_CAMO_2018</td>
<td>PREDICTIVE FACTORS OF IMMUNOTHERAPY INDUCED IMMUNE-RELATED ADVERSE EVENTS</td>
<td>Baskoro Adi Kartolo</td>
<td>17</td>
</tr>
<tr>
<td>07_CAMO_2018</td>
<td>NEUTROPHIL TO LYMPHOCYTE RATIO (NLR) IS A USEFUL PROGNOSTIC MARKER FOR SURVIVAL IN PATIENTS WITH LOCALLY ADVANCED (STAGE III) NON-SMALL CELL LUNG CANCER (NSCLC)</td>
<td>Ali Tahir</td>
<td>18</td>
</tr>
<tr>
<td>09_CAMO_2018</td>
<td>IMMUNOTHERAPY EFFICACY AND TOXICITY IN A REAL-WORLD ELDERLY POPULATION</td>
<td>Joobin Sattar</td>
<td>19</td>
</tr>
<tr>
<td>11_CAMO_2018</td>
<td>SURVIVAL IN TRIPLE NEGATIVE BREAST CANCER: A POPULATION-BASED COMPARISON ACROSS ETHNICITIES</td>
<td>Moira Rushton-Marovac</td>
<td>20</td>
</tr>
<tr>
<td>12_CAMO_2018</td>
<td>DOES THE RISK OF EMERGENCY DEPARTMENT VISITS AND HOSPITALIZATIONS DURING SYSTEMIC THERAPY FOR CANCER INFLUENCE PATIENTS' DECISIONS REGARDING TREATMENT?</td>
<td>Cameron Phillips</td>
<td>21</td>
</tr>
<tr>
<td>14_CAMO_2018</td>
<td>BREAST CANCER PREVENTION AT MAMMOGRAPHY SCREENING AND WELL WOMEN'S CLINICS</td>
<td>Amanda Rundle</td>
<td>22</td>
</tr>
<tr>
<td>17_CAMO_2018</td>
<td>A POPULATION-BASED COMPARISON OF CANCER AND NON-CANCER RELATED HEALTHCARE COSTS</td>
<td>Davis Sam</td>
<td>23</td>
</tr>
<tr>
<td>18_CAMO_2018</td>
<td>THE EFFECT OF MATE1 POLYMORPHISMS ON CISPLATIN EFFICACY IN THE TREATMENT OF HEAD AND NECK CANCER</td>
<td>Mary Mahler</td>
<td>24</td>
</tr>
<tr>
<td>19_CAMO_2018</td>
<td>PATTERNS OF RECURRENCE AND OUTCOMES AFTER CURATIVE RESECTION OF LOCALLY ADVANCED HER2-POSITIVE GASTROESOPHAGEAL CANCER (HPGEC)</td>
<td>Di (Maria) Jiang</td>
<td>25</td>
</tr>
<tr>
<td>21_CAMO_2018</td>
<td>ADJUVANT CHEMOTHERAPY AND SURVIVAL OUTCOMES IN DIABETIC PATIENTS WITH COLON CANCER: A REAL-WORLD, POPULATION-BASED ANALYSIS</td>
<td>Shiru (Lucy) Liu</td>
<td>26</td>
</tr>
<tr>
<td>22_CAMO_2018</td>
<td>REAL WORLD EXPERIENCE WITH DOCETAXEL FOR CASTRATION-SENSITIVE PROSTATE CANCER (CSPC) FROM A POPULATION-BASED ANALYSIS</td>
<td>Jean-Michel Lavoie</td>
<td>27</td>
</tr>
<tr>
<td>25_CAMO_2018</td>
<td>THE IMPACT OF AGE ON THE MANAGEMENT AND OUTCOMES OF METASTATIC GASTRIC AND ESOPHAGEAL CANCER IN OLDER ADULTS</td>
<td>Daniel Yokom</td>
<td>29</td>
</tr>
<tr>
<td>27_CAMO_2018</td>
<td>A REAL-WORLD COMPARISON OF MULTI-MODALITY THERAPIES IN LOCALLY ADVANCED GASTRO-ESOPHAGEAL JUNCTION (GEJ) CANCERS</td>
<td>Haider Samawi</td>
<td>30</td>
</tr>
<tr>
<td>30_CAMO_2018</td>
<td>ABSTRACT NOT PUBLISHED</td>
<td>Steven Yip</td>
<td>31</td>
</tr>
<tr>
<td>31_CAMO_2018</td>
<td>THE CLINICAL IMPACT OF THE CANADIAN HEREDITARY RENAL CELL CARCINOMA RISK CRITERIA ON GENETIC TESTING</td>
<td>Igal Kushnir</td>
<td>32</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENT

## POSTER PRESENTATIONS (RESIDENTS/FELLOWS/MEDICAL STUDENTS)

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>37_CAMO_2018</td>
<td>ASSESSMENT OF EVIDENCE DRIVEN CANCER DRUG APPROVALS IN PHASE II VERSUS PHASE III CLINICAL TRIALS WITHIN the pan-Canadian Oncology Drug Review (pCODR) Group</td>
<td>Ying Wang</td>
<td>33</td>
</tr>
<tr>
<td>40_CAMO_2018</td>
<td>THE IMPACT OF CHRONIC KIDNEY DISEASE IN LOCALLY ADVANCED RECTAL CANCER PATIENTS TREATED WITH NEOADJUVANT CHEMORADIATION</td>
<td>Shaan Dudani</td>
<td>34</td>
</tr>
<tr>
<td>41_CAMO_2018</td>
<td>ASSESSING THE ADDED UTILITY OF PETCT OVER CONVENTIONAL IMAGING IN THE INVESTIGATION AND MANAGEMENT OF OVARIAN CANCER</td>
<td>Sarah Cook</td>
<td>35</td>
</tr>
<tr>
<td>43_CAMO_2018</td>
<td>QUALITY OF PHASE 0 AND WINDOW-OF-OPPORTUNITY TRIAL DEFINITION AND REPORTING</td>
<td>Omar Khan</td>
<td>36-37</td>
</tr>
<tr>
<td>45_CAMO_2018</td>
<td>DIFFERENTIAL OUTCOMES BETWEEN 1ST AND 2ND GENERATION TKIS IN PATIENTS WITH ACTIVATING EGFR MUTATIONS IN NSCLC</td>
<td>Sally Lau</td>
<td>38</td>
</tr>
<tr>
<td>48_CAMO_2018</td>
<td>THE IMPACT OF SOCIOECONOMIC FACTORS ON OUTCOMES OF PATIENTS WITH RECTAL CANCER</td>
<td>Joanna Gotfrit</td>
<td>39-40</td>
</tr>
<tr>
<td>49_CAMO_2018</td>
<td>UTILIZATION OF PREVENTIVE CARE AMONG COLON CANCER SURVIVORS</td>
<td>Sally Lau</td>
<td>41</td>
</tr>
<tr>
<td>50_CAMO_2018</td>
<td>UNNECESSARY IMAGING FOR METASTASES IN EARLY BREAST CANCER PATIENTS IN ALBERTA</td>
<td>Ayesha Bashir</td>
<td>42</td>
</tr>
<tr>
<td>51_CAMO_2018</td>
<td>ASSESSMENT OF FRAILTY IN MEN WITH METASTATIC PROSTATE CANCER</td>
<td>Jennifer Melvin</td>
<td>43</td>
</tr>
</tbody>
</table>

## POSTER PRESENTATIONS (OTHER)

<table>
<thead>
<tr>
<th>Abstract #</th>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>08_CAMO_2018</td>
<td>INSTITUTIONAL PRACTICE PATTERNS FOR THE USE OF NEOADJUVANT SYSTEMIC THERAPY FOR BREAST CANCER: A RETROSPECTIVE ANALYSIS</td>
<td>Lara Zibdawi</td>
<td>44</td>
</tr>
<tr>
<td>23_CAMO_2018</td>
<td>IDENTIFYING GERIATRIC COMPETENCIES FOR THE MEDICAL ONCOLOGY TRAINEE - A DELPHI CONSENSUS OF NORTH AMERICAN MEDICAL AND GERIATRIC ONCOLOGISTS</td>
<td>Tina Hsu</td>
<td>45</td>
</tr>
<tr>
<td>32_CAMO_2018</td>
<td>BRINGING THE TEAMS TOGETHER TO INCORPORATE A PERSONALIZED MULTIFACETED CARE PLAN INTO THE STANDARD CARE OF BREAST CANCER: A QUALITY IMPROVEMENT PROJECT</td>
<td>Rashida Haq</td>
<td>46</td>
</tr>
<tr>
<td>35_CAMO_2018</td>
<td>WILL WOMEN WITH BREAST CANCER (BC) BE WILLING TO TAKE ADJUVANT PALBOCICLIB IN ADDITION TO STANDARD ENDOCRINE THERAPY (ET)?</td>
<td>Jessica Jesin</td>
<td>47</td>
</tr>
<tr>
<td>38_CAMO_2018</td>
<td>ARIEL4: AN INTERNATIONAL, RANDOMIZED, PHASE 3 STUDY OF THE POLY(ADP-RIBOSE) POLYMERASE (PARP) INHIBITOR RUCAPARIB VERSUS CHEMOTHERAPY AS TREATMENT FOR BRCA1- OR BRCA2-MUTATED RELAPSED OVARIAN CANCER (OC)</td>
<td>Stephanie L’Heureux</td>
<td>48</td>
</tr>
<tr>
<td>39_CAMO_2018</td>
<td>THE TRITON CLINICAL TRIAL PROGRAM: EVALUATION OF THE POLY(ADP-RIbose) POLYMERASE (PARP) INHIBITOR RUCAPARIB IN PATIENTS WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (mCRPC) ASSOCIATED WITH HOMOLOGOUS RECOMBINATION DEFICIENCY (HRD)</td>
<td>Srikala Sridhar</td>
<td>49</td>
</tr>
</tbody>
</table>
Abstract #52_CAMO_2018

PLASMA MIR371 FOR THE DETECTION OF VIABLE GERM CELL TUMOR

Lucia Nappi1,2, Marisa Thi2, Bernhard Eigl1, Kim Chi1, Martin Gleave2, Daniel Khalaf4, Alan So2, Peter Black2, Craig Nichols3, Christian Kollmannsberger1
1. British Columbia Cancer Agency, Vancouver, BC, Canada
2. Vancouver Prostate Centre, Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada
3. Intermountain Medical Center, Salt Lake City, Utah, USA

BACKGROUND
Determining the histology of post-chemotherapy residual disease (PCRD) or enlarged nodes in clinical stage I (CSI) patients (pts) with germ cell tumor (GCT) is challenging, especially when tumor markers (β-HCG, AFP, LDH) are negative. Currently, accurate assessment requires clinical follow-up with imaging to establish patterns of growth or pathological confirmation with RPLND. A blood-based approach to reliably identify patients with non teratoma viable GCT (NTVGCT) would be valuable.

METHODS
Plasma miR371 of pts with GCT was analyzed by RT-PCR and relative expression calculated by the 2-ΔΔCt method. Plasma from healthy male volunteers was used as negative control while miR-93-5p as internal positive control. The sensitivity and specificity of miR371 were calculated correlating miR371 overexpression to the presence of relapsed/residual NTVGCT.

RESULTS
Fifty eight samples (20 CSI, 20 metastatic, 18 PCRD) were analyzed. Ten CSI pts presented with suspicious enlarging nodes (≥ IIA) and miR371 was overexpressed in 5/6 pts with confirmed tumor relapse. Neither CSI pts with unconfirmed enlarging nodes (n = 4) or with no signs of relapse (n = 10) presented high miR371 levels. miR371 was overexpressed in all the pre-chemotherapy metastatic pts (n = 10) and negative after chemotherapy (n = 10), with 4 pts presenting PCRD. miR371 was negative in all the pts with PCRD and no residual NTVGCT was detected in those pts by either pathology (n = 10) or clinical follow-up (n = 8). Sensitivity and specificity were 93.3% and 100%, respectively.

CONCLUSIONS
Elevated plasma levels of miR371 correlate with the presence of NTVGCT and may lead to biological rather than radiographic assessment of active GCT. These encouraging findings inform upcoming North American trials for further definition of miR371 operating characteristics in all stages, sites of origin, gender and age specific GCTs.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Samples (n)</th>
<th>Histology</th>
<th>miR371 +</th>
<th>miR 371 -</th>
<th>NTVGCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>20</td>
<td>11</td>
<td>9</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>PCRD</td>
<td>18</td>
<td>2</td>
<td>16</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Metastatic</td>
<td>20</td>
<td>4</td>
<td>16</td>
<td>10a</td>
<td>10a</td>
</tr>
</tbody>
</table>

a prechemo
b postchemo
Abstract #42_CAMO_2018
DETERMINING BIOMARKERS OF RESPONSE TO DOCETAXEL FOR PATIENTS WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (mCRPC) USING CIRCULATING CELL-FREE TUMOR DNA (ctDNA)
Daniel J Khalaf1, Cameron Herberts2, Gillian Vandekerkhove2, Matti Annala3, Kevin Beja2, Bernhard J Eigl1, Christian Kollmansberger1, Lucia Nappi1,2, Joanna Vergidis4, Alexander W Wyatt5, Kim N Chi1,2
1BC Cancer Agency Vancouver Centre, Vancouver, BC; 2Vancouver Prostate Centre, University of British Columbia, Vancouver, BC; 3Institute of Biosciences and Medical Technology, Tampere, Finland; 4BC Cancer Agency, Victoria, BC

OBJECTIVE
To assess whether somatic and germline genomic alterations are predictive for response to docetaxel in mCRPC using plasma ctDNA.

METHODS
Patients commencing docetaxel for mCRPC between November 2015 and August 2017 were enrolled. A plasma sample for ctDNA analysis was collected before initiation of docetaxel. Targeted sequencing of 73 prostate cancer-relevant genes was performed on leukocyte DNA (germline) and plasma cell-free DNA. Patient records were reviewed for baseline clinical characteristics, PSA response (≥ 50% decline from baseline), and time to PSA progression (TTPP) (PCWG3 criteria).

RESULTS
There were 33 patients enrolled; all patients had received prior abiraterone or enzalutamide and none had received prior taxanes. The median age was 70 years, 30% had ECG performance status 2 and bone/liver metastasis present in 67%/9%. Deleterious genomic alterations included: BRCA2 or ATM defects in 12% (4/33) of patients, TP53 alterations in 39% (13/33), RB1 loss in 21% (7/33), PTEN loss in 21% (7/33), and Androgen Receptor (AR) amplification in 42% (14/33). With docetaxel, the PSA response rate (RR) was 39%, median TTPP 4.3 months (mo) and median overall survival (OS) 10.6 mo. High ctDNA fraction (> 20%), AR amplification and TP53 alterations were associated with a trend toward worse OS, but not with RR or TTPP < 3 months (TABLE). PTEN deletion was associated with a trend toward worse RR. BRCA2/ATM defects were associated with a trend toward improved TTPP < 3 months (TABLE).

CONCLUSION
In this analysis, there were trends for associations between outcomes with docetaxel therapy and genomic alterations in BRCA2/ATM, TP53, RB1, PTEN and AR. Accrual is ongoing in order to further evaluate these associations to identify potential genomic predictors of response and resistance.

<table>
<thead>
<tr>
<th>Alteration</th>
<th>RR (%)</th>
<th>P</th>
<th>TTPP &lt; 3 months (%)</th>
<th>P</th>
<th>HR for OS (95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRCA2/ATM</td>
<td>50</td>
<td>0.643</td>
<td>0</td>
<td>0.129</td>
<td>0.74 (0.17-3.21)</td>
<td>0.686</td>
</tr>
<tr>
<td>TP53</td>
<td>46.2</td>
<td>0.522</td>
<td>30.1</td>
<td>0.794</td>
<td>2.19 (0.96-5.03)</td>
<td>0.064</td>
</tr>
<tr>
<td>RB1</td>
<td>42.9</td>
<td>0.833</td>
<td>14.3</td>
<td>0.222</td>
<td>1.46 (0.59-3.61)</td>
<td>0.410</td>
</tr>
<tr>
<td>PTEN</td>
<td>16.7</td>
<td>0.126</td>
<td>42.9</td>
<td>0.542</td>
<td>1.71 (0.66-4.44)</td>
<td>0.267</td>
</tr>
<tr>
<td>AR</td>
<td>28.6</td>
<td>0.168</td>
<td>42.9</td>
<td>0.301</td>
<td>2.15 (0.94-4.92)</td>
<td>0.070</td>
</tr>
<tr>
<td>ctDNA fraction &gt; 20%</td>
<td>33.3</td>
<td>0.663</td>
<td>33.3</td>
<td>1.000</td>
<td>1.99 (0.85-4.65)</td>
<td>0.112</td>
</tr>
</tbody>
</table>
Abstract #29_CAMO_2018

Not published.
Abstract #16_CAMO_2018

POPULATION BASED ANALYSIS OF MALE PATIENTS WITH BREAST CANCER IN ALBERTA

Osama Ahmed MD, FRCP^1, Winson Cheung MD, FRCP^1, Gloria Roldan Urgoiti MD, MSc, FRPC^1

1. Department of Oncology, Tom Baker Cancer Centre, University of Calgary, AB, Canada.

OBJECTIVE
To evaluate the clinical and pathologic characteristics, management and outcomes of male patients with breast cancer (BC) in Alberta.

METHODS
We identified and reviewed all male patients diagnosed with BC between 2004 and 2016. The Clinical Data Integration database was used to compare aggregated data of this cohort with contemporary female patients with BC.

RESULTS
We included 31,228 patients; 180 (0.6 %) were male. Median age was 66 years in males and 61 years in females (P<0.001). 18 (10%) of males vs 1643 (5%) of females presented as stage IV (p>0.001). 84% of male patients had a modified radical mastectomy. The most frequent pathology was ductal invasive carcinoma (89% in males and 77% in females; p>0.001). Tumors were estrogen receptor positive in 92% of males and 81% of females (p=0.001); progesterone receptor positive: 83% and 70%, respectively (p=0.003) and Her2 positive: 22% and 31%, respectively (p < 0.001). Tamoxifen was the preferred hormonal therapy both in the adjuvant (89.6 %) and palliative settings (83%). Sites of metastases were bone (66%), visceral (57%), skin (16%) and brain (14%). Median overall survival (OS) for males was significantly shorter than females (7.6 years vs not reached at 12.5 years; p < 0.001). When analyzed by stage, there was no difference in survival by gender in patients with advanced BC (Stage III p=0.203; Stage IV p=0.255). In patients with Stage I and II, male patients had significantly shorter survival (p=0.006 and p<0.001, respectively) (Table 1). Gender was associated with worse OS even when adjusting by age and stage (p=0.001).

CONCLUSION
In Alberta, median age for diagnosis of breast cancer in males is higher than females. Median OS was shorter in males in comparison to females in early stages (I and II). Expansion to a pan-Canadian male BC database is planned.

Table 1. Median OS in Male BC vs. Female BC Stratified by Stage.

<table>
<thead>
<tr>
<th>Median OS, years</th>
<th>Male BC patients</th>
<th>Female BC patients</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>8.67 (95%CI 7.88 to 11.13)</td>
<td>not reached</td>
<td>0.006</td>
</tr>
<tr>
<td>Stage II</td>
<td>9.08 (95%CI 5.39 to 12.78)</td>
<td>not reached</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stage III</td>
<td>7.08 (95%CI 2.86 to 11.30)</td>
<td>10.42 (95%CI 9.58 to 11.25)</td>
<td>0.203</td>
</tr>
<tr>
<td>Stage IV</td>
<td>1.58 (95%CI 0.90 to 2.27)</td>
<td>2.17 (95%CI 2.01 to 2.32)</td>
<td>0.255</td>
</tr>
</tbody>
</table>
Abstract #47_CAMO_2018

POTENTIAL LIFE-YEARS LOST: THE IMPACT OF THE CANCER DRUG REGULATORY PROCESS IN CANADA

Joanna Gotfrit1, John Shin2, Ranjeeta Mallick3, David J. Stewart1,3, Paul Wheatley-Price1,3
1Department of Medicine, University of Ottawa, Ottawa, Ontario
2University of Ottawa, Ottawa, Ontario
3Ottawa Hospital Research Institute, Ottawa, Ontario

OBJECTIVE
The Canadian cancer drug approval and funding process is complex. After a positive trial, a Health Technology Assessment (HTA) and recommendation is performed by pCODR (pan-Canadian Oncology Drug Review), allowing subsequent provincial funding decisions. We quantified potential life-years lost until completion of the HTA process.

METHODS
We analyzed all drugs for advanced lung, breast and colorectal cancer that underwent a pCODR HTA from 2011-2017. To calculate life-years lost we multiplied the documented improvement in PFS/OS by the number of eligible patients multiplied by the time interval from proof of efficacy (POE; key publication/presentation) to HTA completion.

RESULTS
We analyzed 21 drugs. The time from POE to HTA decision ranged from 5.4-74.3 months (median 23.9). Of this, the HTA assessment itself took 5.6-33.9 months (median 8.8). Total progression-free life-years lost from POE to HTA decision were 50,881 (lung 8,523; breast 12,385; colorectal 29,972 years). From POE to the start of HTA these were 35,199, while the HTA process itself resulted in 15,681 progression-free life-years lost.

Total overall life-years lost from POE to the HTA decision were 44,332 (lung 22,940; breast 4,509; colorectal 17,333 years). From POE to the start of HTA, these were 23,586, while the HTA process itself resulted in 20,746 overall life-years lost.

CONCLUSION
The number of potential life-years lost during the drug regulatory process are substantial. Recognizing that eligible patients may not all receive a given drug, if even a fraction do so, the impact of delays remains substantive. Our abstract doesn’t report the substantial time post HTA decision to actual provincial funding (if ever funded), which further adds to life-years lost. Collaborative national and provincial initiatives are required to address this major barrier to treatment access.
Abstract #05_CAMO_2018
OUTCOMES AND CHARACTERISTICS OF PATIENTS RECEIVING SECOND-LINE THERAPY FOR ADVANCED PANCREATIC CANCER
Erica S. Tsang¹, Hui-li Wong², Ying Wang¹, Daniel J. Renouf¹, Winson Y. Cheung³, Howard J. Lim¹, Sharlene Gill¹, Jonathan M. Loree¹, Hagen F. Kennecke⁴
¹Division of Medical Oncology, British Columbia Cancer Agency, Vancouver, BC
²Department of Medical Oncology, The Royal Melbourne Hospital, Melbourne, Australia
³Department of Medical Oncology, Tom Baker Cancer Centre, Calgary, AB
⁴Virginia Mason Cancer Institute, Seattle, WA

OBJECTIVE
There is limited randomized data to guide second-line chemotherapy selection in advanced pancreatic cancer (APC). We characterized the predictors and outcomes of second-line chemotherapy in these patients.

METHODS
We identified APC patients who received ≥1 cycle of first-line chemotherapy between January 1, 2012 and December 31, 2015 across 6 centers in British Columbia. Baseline characteristics and survival outcomes were summarized.

RESULTS
Of 676 APC patients (31% locally advanced [LAPC], 69% metastatic [MPC]), 164 (24%) received second-line chemotherapy. These patients were younger (median 63.7 vs. 67.4 years; p=0.01), had a lower ECOG (77% ECOG 0-1 vs. 51%; p<0.001) and higher CA19-9 (median 1034 vs. 829; p=0.01), compared to patients who received only first-line chemotherapy. There were no differences in rates of second-line chemotherapy between LAPC and MPC (28% vs. 23%; p=0.18). On logistic regression, only first-line FOLFIRINOX (OR 5.90, p<0.001) was associated with second-line chemotherapy. Median duration of second-line chemotherapy was 3 cycles (range 1-30).

Median overall survival (mOS) from diagnosis was 16 months, with mOS from second-line chemotherapy longest with second-line GEMABR compared to FP or GEM (7.9 vs. 5.1 vs. 4.3 months; p=0.008). On multivariate analysis, longer OS from second-line chemotherapy was associated with GEMABR (vs. single agent), lower ECOG, LAPC (vs MPC), and lower CA 19-9 (HRs 0.49, 0.67, 0.58, 0.38, respectively).

CONCLUSION
In this population-based cohort, patients treated with second-line chemotherapy were younger, with better ECOG and similar rates of LAPC vs. MPC. First-line FOLFIRINOX was the strongest predictor of second-line chemotherapy, and GEMABR was associated with superior second-line OS.

Table. Regimens used in patients who received second-line chemotherapy (n=164)

<table>
<thead>
<tr>
<th>First-line Chemotherapy</th>
<th>Second-line Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOLFIRINOX</td>
<td>109 (67%)</td>
</tr>
<tr>
<td>Gemcitabine (GEM)</td>
<td>31 (19%)</td>
</tr>
<tr>
<td>Gemcitabine/nab-paclitaxel (GEMABR)</td>
<td>23 (14%)</td>
</tr>
<tr>
<td>Fluoropyrimidine (FP)</td>
<td>1 (0.6%)</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>
WHOLE GENOME SEQUENCING IN METASTATIC BREAST CANCER – LESSONS LEARNED FROM THE BC CANCER PERSONALIZED ONCOGENOMICS PROGRAM

LeVasseur N1, Shen Y2, Zhao EY2, Sun S1, Laskin J1, Gelmon K1, Mara MA2,3, Chia SK1

1 Department of Medical Oncology, British Columbia Cancer Agency, Vancouver, British Columbia
2 Canada’s Michael Smith Genome Sciences Centre, British Columbia Cancer Agency, Vancouver, British Columbia
3 Department of Medical Genetics, University of British Columbia, Vancouver, British Columbia

BACKGROUND
The emerging interest in precision medicine has led to the genomic profiling of breast cancer, with the intent of identifying therapeutically targetable alterations. The clinical relevance of whole genome sequencing (WGS) and RNA-sequencing as compared to targeted next generation sequencing (NGS) remains uncertain. Moreover, refined data is needed to identify which patients benefit most from molecular profiling.

METHODS
Informative and actionable findings from WGS in metastatic breast cancer patients between 2012-2017 were reviewed and compared to pre-existing FoundationOne and MSKCC-IMPACT targeted panels. The data providing rationale for informative and actionable findings was compiled using an RNA/DNA heatmap. Comparison of signal nucleotide variants (SNVs) mutation signatures and mutational burden was compared across histological and molecular subtypes and between aging-driven and non-aging driven tumours.

RESULTS
WGS of 139 metastatic breast cancer patients revealed that 77% of actionable items arose from expression data, 60% from mutations, 45% from copy number changes, 28% from mutation signature, mutation burden, or homologous recombination deficiency (HRD) and 5% from structural variants (SVs). The majority (7616/7998, 95%) of mutations were only detected by WGS, representing mostly passenger mutations, whereas driver mutations were also identified with the genes incorporated in the FoundationOne (339/7998, 4%) and MSKCC-IMPACT panels (201/7998, 3%). No significant differences in mutation burden were identified among subtypes, although tumours whose somatic mutagenesis was driven predominantly by aging-related processes displayed lower mutation burdens. More frequent elevation of HRD-associated mutation signatures of SNVs/SVs were identified in triple-negative and basal-like tumours.

CONCLUSIONS
While most actionable mutations were covered by pre-existing targeted panels, expression data represents a significant proportion of actionable information obtained from WGS. Mutational burden did not vary significantly among subtypes. Signature properties and their relation to molecular subtypes remains an interesting arena for clinical application.
ORAL PRESENTATION

Abstract #01_CAMO_2018
SCREENING FOR NEW PRIMARY CANCERS IN PATIENTS WITH METASTATIC BREAST CANCER: A PROVINCIAL ANALYSIS OF THE CHOOSING WISELY CANADA RECOMMENDATIONS
Megan Tesch¹, Kara Laing²
¹Department of Internal Medicine, ²Department of Oncology, Memorial University of Newfoundland, St. John’s, Newfoundland and Labrador

BACKGROUND
As part of the broader Choosing Wisely Canada campaign, a list was published in May 2015 of practices in oncology that are commonly performed despite evidence showing negligible benefit and the potential to cause harm. One of these recommendations is for physicians to avoid routine cancer screening or surveillance for a new primary malignancy in patients with metastatic disease. The objective of our study was to assess whether local practice is in keeping with these recommendations.

METHODS
A retrospective review of screening for new primary cancers was conducted in metastatic breast cancer patients seen at the Dr. H. Bliss Murphy Cancer Centre in St. John’s, Newfoundland and Labrador (NL) during the three-year period of January 1, 2014 to December 31, 2016. Specific screening investigations included screening mammography, Papanicolaou test, fecal immunochemical test, and screening colonoscopy or flexible sigmoidoscopy.

RESULTS
A total of 305 patient medical records were reviewed. Overall, 114 patients (37.4%) underwent at least one screening investigation (mean, 2.92 investigations per screened patient). 70% of screening investigations were ordered by primary care providers, in comparison to 14% by oncologists and 12% by other specialists. The median overall survival of breast cancer patients after diagnosis of metastatic disease was 42 months, with a 5-year overall survival of 35.9%.

CONCLUSIONS
A significant proportion of patients with metastatic breast cancer in NL and are still undergoing screening for new primary cancers, in discordance with Choosing Wisely guidelines. Increased educational strategies are needed if recommendations are to be implemented into routine clinical practice.
Abstract #04_CAMO_2018

HEALTH RELATED QUALITY OF LIFE IN ELDERLY OR FRAIL PATIENTS WITH ADVANCED COLORECTAL CANCER TREATED WITH DOSE REDUCED CAPECITABINE

Dan Breadner1,2, Mark Vincent1,2, Derek Jonker3, Christine Cripps4, Paul Klimo4, Jim Biagi5, Wendy Lam6, Anne O’Connell1, Frances Whiston1, Larry Stitt1, Stephen Welch1,2

1 London Regional Cancer Program, London, Ontario, Canada
2 Schulich School of Medicine and Dentistry, London, Ontario, Canada
3 Department of Medical Oncology, The Ottawa Hospital Cancer Centre, Ottawa, Ontario, Canada.
4 Medical Oncology, Lions Gate Hospital, North Vancouver, British Columbia, Canada
5 Department of Oncology, Queen’s University, Kingston, Ontario, Canada
6 Burnaby Hospital Cancer Centre, Burnaby, British Columbia, Canada

OBJECTIVES
We have recently published a phase 2 trial of dose reduced capecitabine in elderly or frail patients with advanced colorectal cancer (aCRC). We herein provide a robust analysis of the HRQoL data from our trial.

METHODS
A single arm multi-centered phase II trial of dose reduced capecitabine in elderly or frail patients. Capecitabine was given at 2000 mg/m² days 1-14 q21 days; or 1500 mg/m² for patients with prior pelvic RT, as determined in the phase I portion of the study. Phase II participants (182 patients) were asked to complete FACT-G questionnaires at enrollment, after each cycle of capecitabine and once after cessation of the study drug, if possible.

RESULTS
157 patients completed a baseline questionnaire (86%), and 137 patients (75%) completed at least one subsequent questionnaire. The mean baseline score was 81.6, out of a possible 108. The mean score peaked at 92 after cycle 10. The mean change from baseline was always positive. Patients achieving the minimal clinically important difference (MCID) ranged from 30% to 45% during treatment cycles. Higher baseline FACT-G score and Physical Well-being score were independently prognostic for improved survival (p=0.006 and p<0.0001, respectively). Time until definitive deterioration (TUDD) was longer, but not significant, in patients with a higher baseline FACT-G (p=0.18).

CONCLUSION
Baseline HRQoL scores were independently prognostic for survival, supporting their importance in clinical trials. Compared to full dose, reduced dose capecitabine has previously demonstrated equivocal efficacy and reduced toxicity. We have reported dose reduced capecitabine improves quality of life for elderly or frail patients with aCRC while on treatment, further supporting its use in the management of aCRC.
NEOADJUVANT CHEMOTHERAPY (NC) PRIOR TO TRIMODALITY THERAPY (TMT) FOR MUSCLE-INVASIVE BLADDER CANCER (MIBC) PATIENTS UNDERGOING A BLADDER SPARING APPROACH

**Di (Maria) Jiang1, Haiyan Jiang1, Peter W. M. Chung1, Alexandre Zlotta1, Neil Eric Flesner2, Robert G. Bristow1, Alejandro Berlin1, Girish S. Kulkarni1, Nimira S. Alimohamed2, Gregory Lo2, Srikala S. Sridhar2**

1Princess Margaret Cancer Centre, University Health Network, University of Toronto, Canada
2R. S. McLaughlin Durham Regional Cancer Centre, Lakeridge Health, Oshawa, ON, Canada

**BACKGROUND**
Cisplatin-based NC prior to cystectomy improves survival in MIBC. NC is rarely given before bladder sparing TMT, as these patients are often elderly, frail and cisplatin-ineligible. However, as younger, fitter, cisplatin-eligible patients opt for bladder preservation, NC in this setting warrants re-evaluation.

**METHODS**
From 2008-2017, 58 consecutive MIBC patients received NC followed by TMT at Princess Margaret and Durham Regional Cancer Centers. Gemcitabine cisplatin NC was given for 2-4 cycles followed by external beam radiation (60-66Gy) over 6 weeks with concurrent weekly cisplatin at 40mg/m². Median follow-up was 19.3 months (4.8-96.1). Kaplan Meier analysis was used for survival.

**RESULTS**
Main reasons for TMT were patient preference (60%) and comorbidities (34%). At diagnosis, median age was 72 (45, 87), ECOG PS 0/1. Median CrCl was 58.7 ml/min, 24% had hydronephrosis. Patients had stage II (64%), III (21%), and IV disease with nodal metastases (10%). Histology included pure transitional cell carcinoma (62%), papillary plus (22%), squamous (14%) and plasmacytoid (2%); CIS was present in 29%. Most (95%) completed planned NC cycles, with ORR of 49%. Post NC, cystoscopically 69% had complete response; 70% with gross residual tumor received maximal transurethral resection. 98% completed planned radiotherapy, 40% completed concurrent chemotherapy. Median OS was not reached; 2yr OS rates were 74.0% (95% CI 57.7-84.9). Two-year bladder-intact disease-free survival (BIDFS) rate was 64.2%; 2yr disease specific survival (DSS) rate was 88.3%. Nine patients recurred distantly, 9 (15.5%) received salvage cystectomy, 5 died of disease progression.

**CONCLUSIONS**
NC followed by TMT achieves OS rates comparable to contemporary cystectomy series. These results support the use of NC followed by TMT in cisplatin-eligible MIBC patients undergoing a bladder sparing approach.
Abstract #10_CAMO_2018

BALANCING THE RISKS VERSUS BENEFITS OF TRASTUZUMAB: A CALL TO ACTION FOR ONCOLOGISTS, CARDIOLOGISTS AND CARDIO-ONCOLOGISTS

M Rushton1, I Lima2, C Johnson3, T Meltem2, S Hawken2, S Dent1
1. The Ottawa Hospital Cancer Centre, University of Ottawa, Ottawa, Ontario
2. The Ottawa Hospital Research Institute, The Institute for Clinical Evaluative Sciences, University of Ottawa, Ottawa, Ontario
3. Division of Cardiology, The Ottawa Hospital, University of Ottawa, Ottawa, Ontario

OBJECTIVE
To evaluate the impact of routine cardiac imaging on disease free (DFS) and overall survival (OS) in early stage HER2 positive breast cancer (BC).

METHODS
Retrospective population-based cohort study of early stage BC patients treated with adjuvant trastuzumab in Ontario, Canada, 2007–2016. Patient-level data was sourced through the Institute for Clinical Evaluative Sciences, which captures all patients in Ontario. The cohort was divided into three arms; A: 17-18 cycles trastuzumab, no cardiotoxicity; B: no cardiotoxicity, ≤16 cycles trastuzumab, stopped within 30 days of last cardiac imaging; C: developed cardiotoxicity. Cardiotoxicity was defined as new diagnosis heart failure (HF), cardiomyopathy (CM) or pulmonary edema within 90 days of last cycle of trastuzumab. Primary outcome: DFS; secondary outcomes: OS, cancer-specific, and cardiovascular mortality. Survival analysis was performed using Cox and subdistribution hazard models.

RESULTS
4820 patients met inclusion criteria; 4018, 442 and 360 in arms A, B, and C respectively. Median cycles of trastuzumab were 18, 13 and 14 in arm A, B and C. 5-year DFS was significantly worse in arms B (70.3%; 95% CI 63.5-74.7) and C (74.9%; 69.5-79.5) vs. 93.2% (92.3-94.0) arm A; HR for DFS were 2.96 (2.35-3.72) and 2.41 (1.87–3.12) respectively. 5-year OS was significantly worse in arms B (75.4%) and C (80.1%) vs. arm A (95.2%); HR for OS 3.99 (3.10–5.14) and 2.98 (2.24–3.95) respectively. All p-values were < 0.05.

CONCLUSIONS
BC patients in Ontario who did not complete adjuvant trastuzumab had significantly worse DFS and OS. A significant population stopped trastuzumab shortly after cardiac imaging, without developing cardiotoxicity, likely due to detection of asymptomatic drops in LVEF. These findings support the need to consider strategies to continue cancer therapy in patients with abnormal cardiac imaging, including concurrent optimization of cardiac function and cardiac risk factors.
Abstract #26_CAMO_2018
ADJUVANT THERAPY USE AND OUTCOMES OF STAGE II AND III COLORECTAL CANCER (CRC): COMPARISON OF YOUNG AND ELDERLY PATIENTS IN A LARGE, CONTEMPORARY, POPULATION-BASED CANADIAN DATABASE

Haider H Samawi1, Derek Tilley2, Winson Y. Cheung3
1Tom Baker Cancer Centre, Calgary, AB; 2Guideline Resource Unit, Alberta Health Services, Calgary, AB

BACKGROUND
The incidence of CRC increases significantly with age. Despite the benefits associated with adjuvant therapy, older patients are frequently treated less aggressively due to perceived poor tolerance to treatment, comorbidity, or limited life expectancy. We aim to examine the impact of chronological age on use of perioperative therapies in a contemporary cohort of patients and determine differences in outcomes based on age.

METHODS
Adult patients who underwent surgical resection for stage II or III CRC in Alberta, Canada from 2004 to 2015 were analyzed. Patients were stratified based on pre-specified age sub-groups. Overall survival (OS) and cancer specific survival (CSS) were assessed using the Kaplan-Meier method and compared with the log-rank test. A Cox proportional hazards model was constructed to evaluate the impact of age on outcomes.

RESULTS
We identified 8,538 patients of whom 56% were men, 53% had stage III disease, and 26% had rectal cancer. Older patients were more likely diagnosed with right-sided tumors, earlier stage, and higher Charlson comorbidity index (CCI) (all p <.01). Chemotherapy use decreased significantly with advancing age, even in recent years (Table). Older rectal cancer patients were also less likely to receive radiation (p <.01). Elderly age was the strongest predictor for not using CT, after adjusting for sex, stage, tumor location, and CCI. On multivariate Cox regression, older age was associated with inferior OS and CSS, but chemotherapy use improved outcomes.

CONCLUSIONS
Despite evidence of benefit and prior studies recommending treatment of elderly, the current cohort of older patients with resected stage II and III CRC continue to undergo perioperative therapy less commonly than their younger counterparts.
Abstract #36_CAMO_2018
THE CLINICAL UTILITY OF BASELINE CARDIAC ASSESSMENTS PRIOR TO ADJUVANT ANTHRACYCLINE CHEMOTHERAPY IN BREAST CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS
Pierre O’Brien¹, Kara Matheson¹, Alwin Jeyakumar¹,² & Tallal Younis¹,²
Department of Medicine¹, Division of Medical Oncology², Dalhousie University, Halifax, Canada

BACKGROUND
Cardiac assessment, with MUGA or echocardiography (ECHO), prior to anthracycline-based adjuvant chemotherapy (AdjA) is commonly employed in clinical practice. However, the utility of routine baseline cardiac assessments prior to AdjA for early-stages breast cancer (EBC) outside of clinical trials is uncertain.

OBJECTIVES
i) to determine the clinical impact of routine baseline cardiac assessments prior to AdjA for EBC and ii) to identify patients in whom baseline cardiac assessments may not be warranted.

METHODS
A literature search was performed to identify all relevant observational studies involving pre AdjA MUGA and/or echocardiography in EBC that met predefined criteria. The primary outcomes of this systematic review, and meta-analysis, included: i) the rates of abnormal baseline left ventricular ejection fraction (LVEF) and ii) the changes in chemotherapy decisions following LVEF assessments.

RESULTS
Of 1401 citations retrieved, 8 studies met our predefined criteria. Six studies (n=2,545) reported rates of abnormal LVEF, and six (n=1,713) investigated the impact of baseline LVEF assessment on chemotherapy decisions. Overall, 2.5% of patients (95% CI 2.0 to 4.0%) had abnormal baseline LVEF and 1.6% (95% CI 1.0 to 3.0%) had a change in chemotherapy decision accordingly. These outcomes varied according to LVEF assessment modality (echo vs MUGA vs both), publication type (abstract vs manuscript), and inclusion of metastatic disease (yes vs no). There were no consistently identified risk factors that correlate with abnormal baseline LVEF.

CONCLUSIONS
Routine baseline cardiac assessments prior to AdjA chemo in EBC patients have low rates of abnormal LVEF and infrequently affect clinical management. Future studies should examine correlations with underlying cardiac risk factors in an attempt to identify low risk patients in whom baseline LVEF assessment may not be warranted.
Abstract #15_CAMO_2018

INFLUENCE OF AGGRESSIVE-VARIANT PROSTATE CANCER (AVPC) FEATURES ON OUTCOME OF METASTATIC HORMONE-SENSITIVE PROSTATE CANCER (MHSPC) TREATED BY CHEMOMONAL THERAPY (CHT)

Kim Koczka¹, James Vanhie², Andrea Ibrahim³, Nedal Bukhari³, Neil Reaume³, Sandeep Sehdev³, Kylea Potvin⁴, Lori Sax⁴, Scott Ernst⁴, Michael Vickers⁵, Christina Canil⁵, Eric Winquist⁴, Michael Ong⁵.

Division of Internal Medicine, University of Ottawa, Ottawa, Ontario¹; London Health Sciences Centre, University of Western Ontario, London, Ontario²; Ottawa Hospital Research Institute, Ottawa, Ontario³; Division of Medical Oncology, University of Western Ontario, London, Ontario⁴; Ottawa Hospital Cancer Centre, Ottawa, Ontario⁵.

BACKGROUND

Outcomes of patients undergoing CHT for mHSPC are heterogeneous, with some rapidly developing castration-resistance (CRPC). While AVPC (‘anaplastic’) features are described in CRPC, less is known in the mHSPC setting. In this multi-institutional cohort, we explored pre-treatment factors associated with poor outcome.

METHODS

De-novo mHSPC patients treated with CHT from June 2014 to July 2017 at The Ottawa Hospital Cancer Centre (TOHCC) and London Regional Cancer Centre (LRCC) were retrospectively identified. AVPC features (defined below) were collected and cumulatively scored (0, 1, or 2+), along with treatment and outcome data. Statistical comparisons utilized Cox regression analysis and Kaplan-Meier method for association with CRPC and survival.

RESULTS

92 patients (58 TOHCC, 34 LRCC) were identified; 83 had ‘high-volume’ disease (≥4 bone lesions; or ≥1 visceral metastasis), and 55 had AVPC features: >5 cm nodal/pelvic mass (28), visceral metastases (21), lytic bone metastases (16), elevated LDH (12), low PSA (4), or neuroendocrine differentiation (2). Pre-docetaxel PSA fall of <50, 50-75, 75-90, and ≥90% baseline occurred in 13, 10, 17, and 59% respectively. 9 patients (10%) progressed during docetaxel, and 31 patients (34%) developed CRPC in <12 months. Median time to CRPC was 18.4, 14.0, and 11.0 months for 0, 1, and 2+ AVPC features (log rank p=0.035). CRPC was associated with pre-docetaxel PSA fall <75% (p=0.01). At 18 months median follow-up, 29% with AVPC features have died versus 3% without (log rank p=0.001). In multivariable analysis, AVPC features and pre-docetaxel PSA fall were independently (p<0.008) associated with survival.

CONCLUSIONS

MHSPC patients with AVPC features and <75% pre-docetaxel PSA decline had poor prognosis. Validation of these results in larger cohorts could potentially identify mHSPC patients suitable for further study in clinical trials.
Abstract #02_CAMO_2018

INCIDENCE OF BRAIN METASTASES IN PRIMARY AND METASTATIC BREAST CANCER

Adam S. Komorowski1,2, Ellen Warner2, Helen J. MacKay2, Arjun Saghal2, Kathleen I. Pritchard2, Katarzyna J. Jerzak2

1 Sunnybrook Research Institute, Odette Cancer Centre, University of Toronto, Ontario, Canada
2 Graduate Entry Medical School, University of Limerick, Ireland

OBJECTIVE
To review the reported incidence of brain metastases (BrM) among women with various breast cancer subtypes and stages of disease, in order to identify a population who may benefit from a BrM screening program.

METHODS USED
A literature search was conducted on the OvidSP platform in the Medline database, using MeSH indexing terms and keywords related to breast cancer, brain metastases, and incidence. Articles indexed as of July 12, 2017 were included in the search, which did not include any language or publication restrictions. All experimental and observational studies that reported incidence of BrM in patients with primary or metastatic BC were included.

RESULTS OBTAINED
The literature search yielded 262 articles, of which 73 were included in our final analysis. The incidence of BrM varied considerably among early BC populations. Among HER2+ and triple negative subgroups with early BC, the reported incidence of BrM ranged from 3-9% and 5-7%, respectively. In the metastatic setting, the incidence of BrM ranged from 13-89% among populations with HER2+ disease; the median time-to-development of BrM (from trastuzumab initiation) varied from 10 to 30.8 months. Only two identified studies examined metastatic TNBC populations, with BrM incidence ranging from 9-46%.

CONCLUSION
Based on the relatively low incidence of BrM in patients with early BC regardless of subtype, screening for BrM in this population cannot currently be justified. However, in patients with HER2+ and triple negative MBC, the incidence of BrM approaches a level for which screening these populations may be clinically appropriate. Given the significant associated morbidity and mortality of symptomatic BrM, we argue that prospective trials of BrM screening and early intervention in high risk MBC populations (i.e. HER2+ and TNBC subtypes) are urgently needed.
Abstract #03_CAMO_2018

MEDICAL ASSISTANCE IN DYING (MAiD): THE OPINIONS OF MEDICAL TRAINEES IN NEWFOUNDLAND AND LABRADOR

Robert McCarthy BSc (Pharm), Melanie Seal MD, FRCPC
Discipline of Oncology, Memorial University, St. John’s, NL

OBJECTIVE
The purpose of this study is to determine the opinions of medical trainees in Newfoundland and Labrador regarding Medical Assistance in Dying (MAiD), and to understand some of the factors that may impact these views.

METHODS
A survey was designed and distributed to all medical trainees at Memorial University’s Faculty of Medicine (N=570), the only medical school in the province of Newfoundland and Labrador. The survey collected demographic information, the opinions of participants regarding several statements pertaining to MAiD, and included clinical vignettes of patients requesting the service. Respondents were then divided into groups based on demographic characteristics, and their responses analyzed using non-parametric statistical methods.

RESULTS
124 trainees completed the survey. Ninety percent of respondents agreed with the legalization of MAiD in Canada and nearly 60% stated they would perform the procedure for an eligible patient. Several factors were found to impact the opinions of medical trainees. First, level of training affected the opinions of survey respondents, with undergraduate students significantly more likely to agree with MAiD legalization than their postgraduate counterparts. Second, religious affiliation was negatively correlated with support for MAiD. Finally, extent of involvement impacted the views of trainees, with indirect approaches to MAiD receiving more support among the study cohort.

INTERPRETATION
Medical trainees are predominantly in favor of MAiD in Canada, particularly at the undergraduate level of training. As these future healthcare practitioners join independent practice, MAiD may become a more frequently practiced aspect of end-of-life care for eligible patients.
Abstract #06_CAMO_2018
PREDICTIVE FACTORS OF IMMUNOTHERAPY INDUCED IMMUNE-RELATED ADVERSE EVENTS
Adi Kartolo1,2, Joobin Sattar1,2, Vic Sahai1, Tara Baetz1, and Joshua Lakoff1
1. Queens’ University, Kingston, Ontario
2. Kingston Health Sciences Centre, Kingston, Ontario

OBJECTIVE
To elucidate predictive factors for immune-related adverse events (irAEs) in patients on immunotherapies for management of advanced solid cancers.

METHODOLOGY
This was a retrospective study involving all patients with histologically-confirmed metastatic or inoperable melanoma, non-small cell lung cancer (NSCLC), or renal cell carcinoma (RCC) receiving immunotherapy at the Cancer Centre of Southeastern Ontario. The type and severity of irAEs, as well as potential protective and exacerbating factors were collected from patient charts.

RESULTS
A total of 78 patients receiving ipilimumab (32%), nivolumab (33%), or pembrolizumab (35%) were included in this study. Melanoma, non-small cell lung cancer, and renal cell carcinoma accounted for 70%, 22%, and 8% of the study population respectively. 41 (53%) of the patients developed irAEs, with 12 (15%) patients developing multiple irAEs. Most patients (70%) developed irAEs of severity grade 1 or 2. Female gender (ORadj 0.094, P=0.002) and corticosteroid use prior to immunotherapy (ORadj 0.143, P=0.005) were found to have a protective effect against irAEs, whereas history of autoimmune disease (ORadj 9.55, P=0.025), use of CTLA-4 inhibitors (ORadj 6.25, P=0.008), and poor kidney function of grade 3 and above (ORadj 10.66, P=0.025) were associated with higher risk of developing irAEs. A goodness of fit test using a Hosmer and Lemeshow Test demonstrated that the model was effective at predicting the development of irAEs ($X^2=1.596$, df=7, p=.979).

DISCUSSION AND CONCLUSION
This study highlights several important protective and predisposing factors to developing irAEs for patients on immunotherapy. The results from this study can help guide risk-stratification, monitoring, and management of irAEs in patients placed on immunotherapy for advanced cancer. Future studies are needed to validate this model and to establish the underlying mechanisms in the development of irAEs.
Abstract #07_CAMO_2018
NEUTROPHIL TO LYMPHOCYTE RATIO (NLR) IS A USEFUL PROGNOSTIC MARKER FOR SURVIVAL IN PATIENTS WITH LOCALLY ADVANCED (STAGE III) NON-SMALL CELL LUNG CANCER (NSCLC)

Dr. Ali Tahir1, Wilma M. Hopman1, Dr. Andrew Robinson3
1Department of Internal Medicine, Queen’s University, Kingston, Ontario
2Kingston General Hospital Research Institute, Kingston, Ontario
3Department of Oncology, Queen’s University, Kingston, Ontario

OBJECTIVE
The aim of our study is to investigate the prognostic value of NLR in predicting outcomes in Stage III NSCLC patients, in both palliative and radically treated cohorts.

METHODS
A retrospective cohort diagnosed with Stage III NSCLC between January 1, 2008 and December 31, 2012 at the Cancer Centre of Southeastern Ontario was analyzed. Demographics, clinical and tumor characteristics, and hematological data at different time points were collected. A NLR ≥5 was used to define a high NLR and it was assessed at baseline and after radiation therapy. Associations of NLR level with well-established prognostic markers such as weight loss and performance status were assessed using chi-square tests and independent samples t-tests. Overall survival was compared using the Kaplan-Meier method and multivariable Cox Proportional Hazards models.

RESULTS
A total of 233 patients with stage III NSCLC were included in the study. Median age at diagnosis was 68 years. One hundred patients (42.9%) were treated with radical-intent, and 133 patients (57.1%) with palliative-intent. Median survival was 16.7 months for patients with NLR <5, and 7.7 months for NLR greater than ≥ 5 (p<0.001). High NLR patients were significantly more likely to be treated with palliative intent (75.4% vs. 41.4%, p<0.001). A high NLR was significantly associated with T stage, weight loss, and poor performance status. In multivariate analysis controlling for these known predictors within palliative and radically treated patients, NLR was no longer statistically significant.

CONCLUSION
Elevated NLR (≥5) is a predictor of poor outcome and shorter survival in patients with stage III NSCLC as compared to patients with NLR<5. The NLR is an inexpensive, verifiable test which can used, but clinically adds little to performance status, stage, and weight loss in stage III patients. Larger and prospective studies are needed to confirm the clinical utility of NLR.
IMMUNOTHERAPY EFFICACY AND TOXICITY IN A REAL-WORLD ELDERLY POPULATION

Joobin Sattar1,2, Baskoro Kartolo1,2, Wilma Hopman2, Joshua Lakoff2,3, and Tara Baetz1,2,4
1Department of Medicine, Queen’s University, Kingston, Ontario, Canada.
2Kingston General Hospital, Kingston, Ontario, Canada.
3Department of Endocrinology, Kingston, Ontario, Canada.
4Cancer Centre of Southeastern Ontario, Kingston, Ontario, Canada.

OBJECTIVE
To understand the impact of aging on CTLA-4 and PDL-1 inhibitors efficacy and immune-related adverse events (irAE) in the context of real-world management of advanced solid cancers.

METHODS
This retrospective study involved all non-study patients with histologically-confirmed metastatic or inoperable solid cancers receiving immunotherapy at Kingston Health Sciences Centre. We defined ‘Elderly’ as age ≥75. We collected treatment responses, efficacy, and irAEs as study outcomes. All statistical analyses were conducted under SPSS IBM for Windows version 24.0.

RESULTS
Our study (N=78) had 29 (37%) patients age <65, 26 (33%) patients age 65-74, and 29 (30%) patients age ≥75. Melanoma, non-small cell lung cancer, and renal cell carcinoma accounted for 70%, 22%, and 8% of the study population respectively. Distributions of ipilimumab (32%), nivolumab (33%), and pembrolizumab (35%) were similar in the study. The response rates were 28%, 27%, and 39% in the age <65, age 64-74, age ≥75 groups respectively (P=0.585). Kaplan-Meier curve showed a median survival of 28 months (12.28-43.9, 95% CI) and 17 months (0-36.9, 95% CI) in the age <65 and age 64-74 groups respectively, and it has not been reached in the age>75 (P=0.319). There were no statistically significant differences found in terms of irAEs, multiple irAEs, severity of grade 3 or higher, types of irAEs, and irAEs resolution status when comparing between different age groups.

CONCLUSION
Elderly patients are able to tolerate and gain significant benefit from immunotherapy at least as much as or even more than younger patients. The toxicity of the single agent immunotherapy is mild in this population, and the treatment is well-tolerated. Future studies in evaluating aging and combination immunotherapy would be required.
Abstract #11_CAMO_2018
SURVIVAL IN TRIPLE NEGATIVE BREAST CANCER: A POPULATION-BASED COMPARISON ACROSS ETHNICITIES
M Rushton¹, T Zhang², X Song¹

1. The Ottawa Hospital Cancer Centre, University of Ottawa, Ottawa, Ontario
2. The Ottawa Hospital Research Institute, Ottawa, Ontario

OBJECTIVE
To explore differences in survival amongst different ethnicities in triple negative breast cancer (TNBC).

METHODS
Retrospective population-based study of TNBC using data from the surveillance epidemiology and end results (SEER) database to explore survival differences between ethnicities. We divided patients into 6 ethnic groups for analysis: White, Black, American Indian/Alaskan Native (AIAN), Pacific Islander (PI), Asian and Asian Indian (AI). Patients were excluded if they were <18 or had incomplete data. Primary outcome: overall survival (OS); secondary outcome: breast-cancer specific survival (BCSS). Survival analysis was performed using Cox proportional hazards and Kaplan-Meier models.

RESULTS
Between 2010 and 2014, 32462 cases of TNBC were captured in the SEER database; 980 cases were excluded based on study criteria. 22752 (72.3%) were white, 6319 (20.4%) black, 1720 (5.5%) Asian, 262 (0.8%) AI, 179 (0.6%) AIAN, and 150 (0.5%) PI. Patients of Asian ethnicity had the best OS (HR 0.82, 95% CI 0.72-0.94), while Black patients had the worst (HR 1.21 95% CI 1.13-1.29) when compared with White patients. Differences between other ethnicities were not statistically significant for OS. Black patients had significantly worse BCSS (HR 1.20, 95% CI 1.12 -1.29); no other ethnicity had statistically significant differences compared to Whites. Comparing Asian with Black patients in multivariate analysis the HR was 0.68 (95% CI 0.59 – 0.79) for OS and 0.71 (95% 0.61 – 0.84) for BCSS. Older age, advanced stage, male sex, and lack of chemotherapy, radiation or surgery were also found to be statistically significant variables in multivariate analysis.

CONCLUSIONS
In this large population study, we found Asian patients had significantly better survival than other ethnicities and Black patients did significantly worse. Given the heterogeneity of TNBC it warrants further analysis of TNBC phenotypes on an ethnic basis.
Abstract #12_CAMO_2018

DOES THE RISK OF EMERGENCY DEPARTMENT VISITS AND HOSPITALIZATIONS DURING SYSTEMIC THERAPY FOR CANCER INFLUENCE PATIENTS’ DECISIONS REGARDING TREATMENT?

Cameron M. Phillips¹, Ken Deal⁴, Melanie Powis⁵, Simron Singh⁶, Laavanya Dharmakuselan⁴, Harsh Naik⁴, Aditi Dobriyal⁴, Nasrin Alavi⁵, Monika K. Krzyzanowska¹,³

1. University of Toronto, Toronto, Ontario
2. McMaster University, Hamilton, Ontario
3. Princess Margaret Cancer Centre, Toronto, Ontario
4. Sunnybrook Health Sciences Centre, Toronto, Ontario

OBJECTIVES

When different treatments (tx) produce similar prognostic outcomes, other tx attributes such as toxicity may impact tx preferences. We conducted a discrete choice experiment to evaluate patients’ perception of the risk of an emergency department visit (ED) or hospitalization during treatment when deciding about chemotherapy.

METHODS

Patients with breast, head and neck or colorectal cancer who were contemplating, receiving or had previously received systemic treatment were recruited from 2 academic cancer centres in Toronto, Ontario. Each participant completed 10 choice tasks (5 each in the adjuvant and metastatic settings, respectively) from a possible 128 combinations. Each choice task prompted them to choose between two hypothetical systemic therapies, based on 3 attributes (likelihood of benefit, risk of requiring an ED visit and risk of hospitalization during treatment) that varied across 4 levels. Data was analyzed using a multinomial logit model and individual part-worth utility (PWU) values were estimated using hierarchial Bayes routines.

RESULTS

Between 06/2015 and 09/2017, 293 patients completed the survey. Most patients were female (76%), had a diagnosis of breast cancer (63%) and were currently receiving systemic therapy (72%). 59% of patients were receiving tx with curative intent. PWU values varied as expected with higher PWUs seen for higher treatment benefit, lower risk of ED visits and lower risk of hospitalization. The benefit derived from treatment was the most important decision attribute in both the adjuvant (59%, 95%CI 57.8-60.1%) and metastatic (67.7%, 95%CI 66.8-68.7%) scenarios, followed by risk of hospitalization (18.8 vs 22.8%) then risk of ED visits (13.5 vs 18.3%).

CONCLUSIONS

While the risks of hospitalization and ED visits contribute to patient tx preferences, the extent of tx benefit was the most important attribute especially for metastatic scenarios.
Abstract #14_CAMO_2018

BREAST CANCER PREVENTION AT MAMMOGRAPHY SCREENING AND WELL WOMEN’S CLINICS

Amanda Rundle¹, Sian Iles²,³, Kara Matheson⁴,⁵, Leah Cahill⁵,⁶, Cynthia Forbes³,⁵, Nathalie Saint-Jacques⁵,⁷, Robin Urquhart³,⁶,⁸, Tallal Younis³,⁵

¹ Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia
² Department of Diagnostic Radiology, Dalhousie University, Halifax NS
³ Nova Scotia Health Authority (NSHA), Halifax, Nova Scotia
⁴ Research Methods Unit, NSHA, Halifax, Nova Scotia
⁵ Department of Medicine, Dalhousie University, Halifax Nova Scotia
⁶ Department of Community Health and Epidemiology, Dalhousie University, Halifax Nova Scotia
⁷ Nova Scotia Cancer Care Program Registry and Analytics, NSHA, Halifax, Nova Scotia
⁸ Department of Surgery, Dalhousie University, Halifax NS

BACKGROUND

Women attending mammography (mammo) screening units (MSU) and Well Women’s clinics (WWC) represent a motivated group likely willing to discuss and implement lifestyle interventions and/or endocrine strategies for breast cancer (BC) primary prevention. This study aims to examine; i) women’s views regarding BC primary prevention and preferred/actual sources of health care information, and ii) predictors of prior mammo encounters within screening guidelines.

METHODS

This is a cross-sectional study (survey) in women (aged 40-49 vs. 50-74 years) attending a MSU and/or a WWC in Halifax, Nova Scotia. Variables examined included personal profiling (age, menopausal status, height, weight), comorbidities, prior mammo uptake (within vs outside guidelines; annually for ages 40-49 and biannually for ages 50-74), lifestyle behaviours (smoking, alcohol intake, diet, physical activity), socio-economic status (education, employment, income, marital status, health insurance), health information sources (within vs outside health care system), and willingness to discuss and implement lifestyle modifications and/or endocrine therapy. A logistic regression analysis was conducted to examine associations with prior mammo encounters.

RESULTS

244 responses (75, aged 40-49; 169, aged 50-74) were obtained over 1.5 months, of whom 49% and 93%, respectively had prior mammo within guidelines. Of all women, 75% preferred and 56% sought health information from within as opposed to from outside health care system. Most women were willing to discuss and implement lifestyle modifications (93%) or endocrine therapy (67%). Increasing age and marital status were independent predictors of prior mammo encounters (within vs outside guidelines) in women aged 40-49; there were no statistically significant predictors in those aged 50-74.

CONCLUSIONS

Women attending MSU and WWC not only largely adhere to mammo guidelines, but also appear motivated to engage in primary BC prevention strategies, including lifestyle modifications and/or endocrine therapy – thus, represents an opportune target for BC primary prevention.
A POPULATION-BASED COMPARISON OF CANCER AND NON-CANCER RELATED HEALTHCARE COSTS

Davis Sam

1Department of Medicine, University of Calgary, Calgary, AB; davis.sam@ucalgary.ca

Winson Y Cheung

2Department of Oncology, University of Calgary, Calgary, AB

BACKGROUND
Costs associated with cancer care are increasing. Evaluating costs in the context of common comorbidities has not been extensively studied in a population-based setting. Knowledge from such analyses can better inform healthcare resource allocation and highlight strategies to reduce overall costs.

METHODS
Using data from a population-based administrative database comprised of health insurance claims, physician billing, and hospital discharge abstracts, we calculated healthcare costs (in CAD) for common comorbidities among the pediatric and adult population of a Canadian province for the 2014/15 fiscal year. We calculated incidence-adjusted healthcare costs for common cancers and comorbidities such as cardiovascular disease. Subgroup analysis was also performed for provincial administrative regions.

RESULTS
Total costs related to cancer care amounted to $522M for the province, of which $74M (14%) were attributed to radiation and chemotherapy. Among different cancer subtypes, hematologic malignancies were most costly at $78M, accounting for 15% of the total cancer budget, followed by colon cancer at $51M (10%) and lung cancer at $45M (9%). Cancer costs both with and without accounting for radiation and chemotherapy surpassed those of cardiovascular diseases, diabetes mellitus, mental health, and trauma, but were exceeded by the costs of liver disease (Table 1). Cancer costs varied by provincial administrative region.

<table>
<thead>
<tr>
<th></th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer, with R&amp;C</td>
<td>1951</td>
</tr>
<tr>
<td>Cancer, without R&amp;C</td>
<td>1917</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>806</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>663</td>
</tr>
<tr>
<td>Liver disease</td>
<td>5208</td>
</tr>
<tr>
<td>Musculoskeletal disease</td>
<td>656</td>
</tr>
<tr>
<td>Mental health issues</td>
<td>487</td>
</tr>
<tr>
<td>Trauma</td>
<td>613</td>
</tr>
</tbody>
</table>

Table 1. Incidence-adjusted costs (in CAD) per person per year for cancer and comorbidities. R&C = radiation and chemotherapy.

CONCLUSIONS
Cancer costs were greater than those of other common comorbidities, both with and without the costs of radiation and chemotherapy. Using provincial datasets to establish cost trends can help inform healthcare allocation and budget decision-making.
Abstract #18_CAMO_2018
THE EFFECT OF MATE1 POLYMORPHISMS ON CISPLATIN EFFICACY IN THE TREATMENT OF HEAD AND NECK CANCER
Mary Mahler1, Wendy Teft1,2, Daniel Breadner1,3, Nedal Bukhari2, Sara Kuruvilla2,3, Anthony Nichols4, David Palma5, Richard Kim1,2, Eric Winquist1,3
1Department of Medicine, Schulich School of Medicine and Dentistry, Western University, London ON. 2Department of Clinical Pharmacology, London Health Science Center, London ON. 3Department of Oncology, Division of Medical Oncology, London Regional Cancer Program, Western University, London ON. 4Department of Otolaryngology, London Health Science Center, Western University, London ON. 5Department of Oncology, Division of Radiation Oncology, Western Regional Cancer Program, Western University, London ON.

OBJECTIVES
Homozygosity for a single nucleotide polymorphism (SNP) in the gene encoding the drug transporter Multidrug And Toxin Extrusion protein 1 (MATE1) is associated with reduced ototoxicity risk from cisplatin (Winquist et al ESMO 2016). This study aims to examine if MATE1 influences the treatment efficacy of cisplatin-based chemotherapy in patients with head and neck squamous cell carcinoma (HNSCC).

METHODS
Patients were identified from a prospective, single-centre, observational cohort study of 200 HNSCC patients treated with curative intent cisplatin-based chemoradiation. Patients with HPV-related oropharyngeal and primary unknown cancers were excluded. Germline allelic variants of MATE1 were identified using TaqMan allelic discrimination assays as previously described. The disease specific survival and overall survival of patients with MATE1 homozygous A/A variant were compared to those MATE1 wild type (G/G) and heterozygous (G/A) using the log-rank test.

RESULTS
109 non-HPV-related HNSCC patients were identified and included in the analysis. Median follow up was 33 months. 28 (25.7%) patients had disease progression or recurrence and 30 (27.5%) died. 16 (14.7%) patients expressed the MATE1 A/A variant. Median disease specific survival was 46.2 months in the MATE1 A/A patients and not reached in the G/G and G/A patients (hazard ratio 0.66 [95% confidence interval, 0.23 to 1.82]; p=0.42). Median overall survival was 55.27 months in the MATE1 A/A patients but also not reached G/G and G/A patients (hazard ratio 1.22 [95% confidence interval, 0.46 to 3.27]; p=0.17).

CONCLUSION
Presence of the MATE1 A/A did not compromise treatment efficacy in HNSCC patients receiving cisplatin-based chemoradiation. A small sample size and short duration of follow-up are limitations of our data. As the MATE1 A/A polymorphism appears associated with reduced ototoxicity risk from cisplatin without reduced anticancer activity, it warrants further investigation.
Abstract #19_CAMO_2018
PATTERNS OF RECURRENCE AND OUTCOMES AFTER CURATIVE RESECTION OF LOCALLY ADVANCED HER2-POSITIVE GASTROESOPHAGEAL CANCER (HPGEC)
Di Maria Jiang1, Charles Henry Lim1, Lucy Xiaolu Ma1, Peiran Sun1, Hao-Wen Sim1, Akina Natori1, Bryan Anthony Chan1, Daniel Yokom1, Stephanie Moignard1, Eric Xueyu Chen1, Geoffrey Liu1, Jennifer J. Knox2, Carol Jane Swallow1,2, Gail Elizabeth Darling1,2, Savtaj Singh Brar1, Sara Hafezi-Bakhtiar1, James Conner2, Raymond Woo-Jun Jang1, Elena Elimova1
1Princess Margaret Cancer Centre, University Health Network, Toronto, ON
2Mount Sinai Hospital, Toronto, ON
3Toronto General Hospital, University Health Network, Toronto, ON

BACKGROUND
Literature on recurrence and outcomes of HPGEC is scarce. The aim of this study was to determine pattern of recurrence and outcomes after curative intent surgery for locally advanced HPGEC.

METHODS
From 2011-2016, consecutive patients with HPGEC who underwent curative resection at the Princess Margaret Cancer Centre were identified. Clinico-demographic data were extracted from the electronic health record. Patterns of relapse are classified as nonvisceral (defined as recurrences in the bone, peritoneal or both), visceral (solid organs, brain and lymph nodes), or both. Time to relapse (TTR) and overall survival (OS) were calculated from date of histologic diagnosis.

RESULTS
Of 42 HPGEC patients, 79% were male, and 88% were non-Asian. Median age was 63.6 (IQR 54.3, 70.3); 55% were gastroesophageal junction, 31% were gastric, and 14% were esophageal adenocarcinomas; 31% were poorly differentiated tumors while 68% had clinical or pathological node positivity. R0 resection occurred in 93%, and 84% had perioperative therapy (31% with perioperative chemotherapy; 38% with pre-operative chemoradiation; 10% with post-operative chemoradiation). With a median follow-up time of 26.0 months, relapse rate was 71%. Among first relapses, 90% were distant, while 10% were local recurrences. Among distant relapses, visceral recurrences occurred in 76%, nonvisceral in 3%, and 10% patients had both visceral and nonvisceral recurrences. None had peritoneal-only relapse. Median TTR was 13.1 months (IQR 8.8, 23.5), while median post-recurrence survival was 10.9 months (IQR 4.7, 16.3). Two year OS was 50.0% and 3-year OS was 23.8%.

CONCLUSIONS
More than three-quarters of patients with HPGEC experienced recurrence after curative intent multimodality therapy. Our results suggest that HPGEC rarely relapse with peritoneal only disease or local recurrence, thereby calling into question the utility for aggressive surveillance, pending verification from larger cohorts.
Abstract #21_CAMO_2018
ADJUVANT CHEMOTHERAPY AND SURVIVAL OUTCOMES IN DIABETIC PATIENTS WITH COLON CANCER: A REAL-WORLD, POPULATION-BASED ANALYSIS
Shiru L. Liu1, Sharlene Gill2, Winson Y. Cheung3
1 BC Cancer, Department of Medical Oncology, University of British Columbia, Vancouver, BC
2 Tom Baker Cancer Institute, Department of Oncology, University of Calgary, Calgary, AB

OBJECTIVE
Diabetes can pose challenges when using chemotherapy because specific cytotoxic drugs, including oxaliplatin, may potentiate certain diabetic complications, such as neuropathy. We performed a provincial analysis of resected colon cancer patients to evaluate the prevalence of diabetes, type of chemotherapy used, and survival outcomes.

METHODS
We examined 5,440 patients with stage 2 or 3 colon cancer who were diagnosed from 2004 to 2015 in Alberta and who underwent curative-intent surgery. Baseline patient, tumor, and treatment characteristics were compared between those with and without diabetes. Survival analysis was conducted based on Kaplan-Meier methods.

RESULTS
In this cohort, 608 patients (11%) had uncomplicated diabetes (UDM) and 436 (8%) had diabetes with complications (CDM), defined as neuropathy or other micro/macrovacular end-organ damage. CDM patients were older and had worse Charlson comorbidity index (p<0.001). While 34% of UDM patients and 35% of non-diabetic patients received adjuvant chemotherapy, only 15% of CDM patients received adjuvant chemotherapy (p<0.001). Among those who received chemotherapy (N=1574), oxaliplatin-based regimen was given to 45% and 52% of UDM and non-diabetic patients, respectively, but only 35% of CDM patients (p<0.001). Kaplan-Meier analysis revealed significantly worse overall survival (OS) in the CDM group when compared to the UDM or non-diabetic groups (p<0.001). Of those treated with adjuvant chemotherapy, however, there were no statistical differences in OS (p=0.188) or cancer-specific survival (CSS) (p=0.461) across all groups regardless of diabetes or complication status (see table).

<table>
<thead>
<tr>
<th>Survival by diabetes and oxaliplatin receipt</th>
<th>5-year OS</th>
<th>5-year CSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-diabetic (1345)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monotherapy</td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>Oxaliplatin</td>
<td>80%</td>
<td>82%</td>
</tr>
<tr>
<td>UDM (175)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monotherapy</td>
<td>72%</td>
<td>78%</td>
</tr>
<tr>
<td>Oxaliplatin</td>
<td>75%</td>
<td>79%</td>
</tr>
<tr>
<td>CDM (54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monotherapy</td>
<td>60%</td>
<td>72%</td>
</tr>
<tr>
<td>Oxaliplatin</td>
<td>64%</td>
<td>79%</td>
</tr>
</tbody>
</table>

CONCLUSION
The worse prognosis of CDM patients with colon cancer may be attributed in part to underuse of adjuvant chemotherapy. Those treated with oxaliplatin appear to experience similar survival outcomes as their UDM and non-diabetic counterparts.
Abstract #22_CAMO_2018
REAL WORLD EXPERIENCE WITH DOCETAXEL FOR CASTRATION-SENSITIVE PROSTATE CANCER (CSPC) FROM A POPULATION-BASED ANALYSIS
Jean-Michel Lavoie 1, Kevin Zou 1, Daniel Khalaf 1, Bernhard J. Eigi 1, Christian K. Kollmannsberger 1, Joanna Vergidis 2, Krista Noonan 3, Muhammad Zulfiqar 4, Daygen Finch 5, Kim N. Chi 1
1 Department of Medical Oncology, BC Cancer – Vancouver Centre, Vancouver, BC, Canada;
2 Department of Medical Oncology, BC Cancer – Vancouver Island Centre, Victoria, BC, Canada;
3 Department of Medical Oncology, BC Cancer – Fraser Valley Centre, Surrey, BC, Canada;
4 Department of Medical Oncology, BC Cancer – Abbotsford Centre, Abbotsford, BC, Canada;
5 Department of Medical Oncology, BC Cancer – Centre for the Southern Interior, Kelowna, BC, Canada

BACKGROUND
Phase III clinical trials have demonstrated efficacy for the addition of docetaxel to androgen deprivation therapy (ADT) in the treatment of metastatic CSPC (mCSPC). The effectiveness of docetaxel with ADT in the general patient population remains undefined.

METHODS
A population-based retrospective review was conducted of patients with mCSPC who received docetaxel at the BC Cancer Agency from 04/2015 to 02/2017.

RESULTS
156 patients received docetaxel in the mCSPC setting. Baseline characteristics: median age 67 years (44-86); visceral metastases in 11%; high volume disease in 80%; de-novo metastatic disease in 76%. All 6 docetaxel cycles were delivered in 81% of cases; it was stopped early for: toxicity 10%, unrelated death 0.6%, patient preference 3% or disease progression 6% cases. Dose reductions and delays were required in 39% and 16% cases. Grade 3-5 adverse events were noted in 40% cases, with 18% febrile neutropenia (FN). Patients with high-volume disease were more likely to develop FN (HR 8.6, p=0.038); There was no effect from age, baseline performance status, PSA, visceral involvement, or time from ADT start to docetaxel. 41% developed castration resistance within 1 year; median time to treatment failure (TTF): 14.3 months. On multivariate analysis, number of bone metastases >3 was the only factor predicting TTF (HR 8.3, p<0.001). Treatment for CRPC was given in 54 cases, with most patients receiving either abiraterone or enzalutamide (87%) with a PSA decline ≥50% occurring in 47%.

CONCLUSIONS
Effectiveness of docetaxel with ADT in a general population of patients with mCSPC was associated with poorer outcomes and high rates of toxicity compared to phase III studies. Response rates to first-line treatment for mCRPC with abiraterone or enzalutamide appear similar to those previously reported.
Abstract #24_CAMO_2018

COBIMETINIB- AND VEMURAFENIB-INDUCED GRANULOMATOUS DERMATITIS AND ERYTHEMA INDURATUM: CASE REPORT AND REVIEW OF THE LITERATURE

Marco A J Iafolla MD MSc1, Jennifer Ramsay MD2, Judy Wismer MD3, Elaine McWhirter MD MSc1
1Department of Medical Oncology, Juravinski Cancer Centre, McMaster University, Hamilton, Ontario, Canada.
2Department of Anatomical Pathology and Molecular Medicine, Juravinski Hospital, Hamilton, McMaster University, Ontario, Canada.
3Department of Dermatology, McMaster University, Hamilton, Ontario, Canada.

OBJECTIVE
To document the first known case of cobimetinib- and vemurafenib-induced granulomatous dermatitis and erythema induratum in a patient with metastatic melanoma, and review the literature regarding clinical features and management of these dermal side effects.

METHODS AND CASE DESCRIPTION
Our 37-year-old male initially had a resected T4b N1a malignant cutaneous melanoma that metastasized during month 4 of adjuvant interferon. His tumor was BRAF V600E mutation positive, and received combination therapy on a clinical trial investigating vemurafenib plus/minus cobimetinib (unblinding after trial completion). He developed biopsy-proven granulomatous dermatitis and erythema induratum after 13 months and 26 months of combination treatment, respectively. He had a stuttering course of lesion flares that would spontaneously resolve or recur regardless of dose reduction or topical steroids; discontinuation of cobimetinib and vemurafenib led to resolution of the lesions. The patient has had complete radiograph response. PubMed was searched January 2018 using the keywords “BRAF” or “MEK” in combination with “granulomatous dermatitis” or “erythema induratum” or “erythema nodosum”.

RESULTS
The PubMed search yielded 1204 publications; 6 were deemed relevant to our study. Review of the literature revealed erythema induratum is histopathologically distinct from the well-documented BRAF inhibitor-induced erythema nodosum. Our patient developed lesions well past the documented range of 7 days to 16 months for erythema nodosum. Management for BRAF inhibitor-induced erythema induratum is non-existent; data from BRAF inhibitor-induced erythema nodosum suggests withholding the offending drug, non-steroidal anti-inflammatories, or topical or systemic glucocorticoids.

CONCLUSION
Granulomatous dermatitis and erythema induratum from cobimetinib and vemurafenib treatment for metastatic melanoma is now documented. Its management is unknown; our patient’s dermal side effects ultimately resolved upon discontinuation of the combination. It is unknown if these dermal side effects are related to clinical response.
Abstract #25_CAMO_2018
THE IMPACT OF AGE ON THE MANAGEMENT AND OUTCOMES OF METASTATIC GASTRIC AND ESOPHAGEAL CANCER IN OLDER ADULTS

Daniel W. Yokom,1,2 Akina Natori,1,2 Hao-Wen Sim,1,2 Bryan A Chan,1,2 Stephanie Moignard,1 Peiran Sun,1 Charles Lim,1,2 Di Maria Jiang,1,2 Lucy Ma,1,2 Gail Darling,1,4 Carol Swallow,6,7 James Brierley,6,7 Rebecca Wong,6,7 Geoffrey Liu,1,2 Jennifer Knox,1,2 Eric Chen,1,2 Shabbir M.H. Alibhai,8,9 Raymond Jang,1,2 Elena Elimova1,2

1 Division of Medical Oncology and Hematology, Princess Margaret Cancer Centre, University Health Network, Toronto, Ontario.
2 Department of Medical Oncology and Hematology, University of Toronto, Toronto, Ontario.
3 Division of Surgical Oncology, Princess Margaret Cancer Centre, University Health Network, Toronto, Ontario.
4 Department of Surgery, University of Toronto, Toronto, Ontario.
5 Division of General Surgery, Mount Sinai Hospital, Toronto, Ontario.
6 Division of Radiation Oncology, Princess Margaret Cancer Centre, University Health Network, Toronto, Ontario.
7 Department of Radiation Oncology, University of Toronto, Toronto, Ontario.
8 Department of Geriatrics, University Health Network, Toronto, Ontario.
9 Division of Geriatric Medicine, Faculty of Medicine, University of Toronto, Toronto, Ontario.

OBJECTIVE
The objective of this study was to examine the impact of age on treatment and survival for older adults with metastatic gastric and esophageal cancer.

METHODS
Patients aged ≥65 years treated at Princess Margaret Cancer Centre from 2011 to 2016 were identified from a retrospective database of patients with metastatic gastric and esophageal (GE) cancer. The impact of age ≥75 years (old-old) versus 65-74 years (young-old) on treatment and survival was assessed using multivariable logistic and Cox proportional hazard regression models, respectively, adjusted for known prognostic factors including sex, comorbidity, primary site, histology, grade, stage at initial diagnosis, metastatic sites, and chemotherapy use.

RESULTS
Of 183 patients, median age was 72 (range 65-92) years; 31% were old-old. Old-old patients were less likely to be treated with any chemotherapy (12.3% vs. 45.2% young-old; adjusted odds ratio = 0.12 (95% confidence interval (CI) 0.05-0.31)). With a median follow-up of 5.7 months, 135 (74%) had died during follow-up; median overall survival was 5.2 months for the old-old vs. 8.4 months in the young-old. There was no significant difference in survival between the two groups after adjustment for known prognostic factors (old-old vs. young-old: univariable hazard ratio (HR) 1.75 (95% CI 1.2-2.5); adjusted HR 1.1 (95% CI 0.7-1.7). Treatment with any chemotherapy was associated with an improvement in survival: adjusted HR 0.34 (95%CI 0.22-0.52).

CONCLUSIONS
In this single-centre study of older adults with metastatic GE cancer, there was an overall low rate of treatment with chemotherapy; those ≥75 were rarely treated. After accounting for known prognostic factors, there was no observed difference in survival between patients ≥75 and those 65 to 74. On multivariable analysis patients ≥75 years seemed to benefit from palliative chemotherapy. Comprehensive geriatric assessment may improve treatment selection in the older population.
Abstract #27_CAMO_2018
A REAL-WORLD COMPARISON OF MULTI-MODALITY THERAPIES IN LOCALLY ADVANCED GASTRO-ESOPHAGEAL JUNCTION (GEJ) CANCERS

Haider H Samawi1, Derek Tilley2, Patricia A. Tang1, Jennifer L. Spratlin1, Richard M. Lee-Ying1, Winson Y. Cheung1

1 Tom Baker Cancer Centre, Calgary, AB; 2 Guideline Resource Unit, Alberta Health Services, Calgary, AB; 3 Cross Cancer Institute, Edmonton, AB

BACKGROUND
Trials show that perioperative therapies improve survival in GEJ cancers. However, the different regimens have not been directly compared. We examined population-based outcomes of 3 treatments: 1) neoadjuvant carboplatin and paclitaxel plus radiation (CROSS); 2) perioperative epirubicin, cisplatin, and fluoropyrimidine (MAGIC); and 3) cisplatin and fluoropyrimidine with radiation (CisFP).

METHODS
We reviewed patients diagnosed with GEJ cancer from 2005 to 2015 who received CROSS, MAGIC, or CisFP at all cancer centers in Alberta, Canada. Survival was assessed with Kaplan-Meier curves and compared with the log-rank test. A Cox proportional hazards model was constructed to evaluate the impact of treatment on overall survival (OS).

RESULTS
331 patients were identified. Median age was 63 (IQR 56-69) years and 86% were men. CROSS was used in 217 (65%) cases followed by CisFP in 72 (22%) and MAGIC in 42 (13%). Age, sex, and stage were not associated with treatment selection (all \( p > 0.05 \)). CROSS and MAGIC correlated with higher surgical resection rates when compared to CisFP (82% vs. 79% vs. 50%, respectively, \( p < 0.01 \)). Median OS favored CROSS and MAGIC rather than CisFP, but this was not statistically significant (29 vs. 34 vs. 20 months, respectively, \( p = 0.17 \)). Adjusting for confounders, OS remained similar for MAGIC (HR 0.8, 95%CI 0.5-1.3, \( p = 0.36 \)) and CisFP (HR 0.7, 95%CI 0.5-1.1, \( p = 0.10 \)) when compared to CROSS. Age > 65, advanced stage, and lack of surgical resection were associated with increased risk of death (HR 1.5, 95%CI 1.1-2.0, \( p = 0.02 \), HR 2.2, 95%CI 1.2-3.9, \( p < 0.01 \) and HR 4.1, 95%CI 2.8-5.9, \( p < 0.01 \), respectively).

CONCLUSIONS
OS was similar across all 3 regimens, but outcomes were inferior to those seen in original trials. This observation suggests that GEJ patients in routine practice are different from study participants.
Abstract #30_CAMO_2018

Not published.
Abstract #31_CAMO_2018
THE CLINICAL IMPACT OF THE CANADIAN HEREDITARY RENAL CELL CARCINOMA RISK CRITERIA ON GENETIC TESTING

Affiliations
1 Division of Medical Oncology, The Ottawa Hospital Cancer Centre and the University of Ottawa, Ottawa, ON.
2 Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel.
3 Ottawa Hospital Research Institute, Ottawa, ON
4 University Health Network, Toronto, ON
5 Children’s Hospital of Eastern Ontario, Ottawa, ON.
6 Division of Urology, and the University of Ottawa, Ottawa, ON
7 Department of Surgery, Centre Hospitalier de l’Université de Montréal, Montreal, QC.
8 Division of Urology, Department of Surgery, University of Western Ontario, London, ON;
9 St. Joseph Health Care London, University of Western Ontario, London, ON.
10 University Health Network, Toronto, ON
11 Juravinski Cancer Centre, McMaster University, Hamilton, ON
12 Princess Margaret Cancer Centre, University Health Network, Toronto, ON
13 Division of Medical Oncology, Queen Elizabeth II Health Sciences Centre, Halifax, NS
14 Division of Urology, McGill University, Montreal, QC
15 Tom Baker Cancer Centre, University of Calgary, Calgary, AB
16 Cross Cancer Institute, University of Alberta, Edmonton, AB, Canada.
17 Vancouver Prostate Centre, University of British Columbia, Vancouver, BC
18 Laval University, Quebec, QC.

OBJECTIVE
In this study we evaluated the clinical impact of the Canadian criteria for identifying patients (pts) and families at risk for hereditary renal cell carcinoma (RCC) on genetic testing.

METHODS
The Canadian hereditary RCC risk criteria were applied to pts from 16 centres in the Canadian Kidney Cancer Information System prospective database. The primary endpoint was the proportion of pts who met at least one criterion. Secondary endpoints included the number of pts with more than one criterion and the number of pts receiving genetic testing (with or without at risk criteria).

RESULTS
From January 2011 to May 2017, 8097 pts were entered in the database. 2827 (35%) met at least one criterion for genetic testing. The majority (83%) met just 1 criterion, while 16% met 2 criteria. The criterion of non-clear cell histology with unusual features contributed the largest proportion of at risk pts (59%), followed by age ≤ 45 years (29%), then first or second degree relative with renal tumour (16%). 69 pts underwent genetic testing, with 59 being classified at risk (<3% of at risk). Details about the genetic testing results will be presented.

CONCLUSIONS
The application of the Canadian hereditary RCC risk criteria to a population database resulted in 35% of pts being identified at risk for hereditary RCC. However, the true incidence of hereditary RCC in this population is unknown as most pts did not undergo genetic testing, and thus the sensitivity or specificity of the criteria cannot be determined. The low proportion of at risk pts that underwent genetic testing was disappointing and highlights that there may be gaps in reporting, knowledge and/or barriers in access to genetic testing.
Abstract #37_CAMO_2018

ASSESSMENT OF EVIDENCE DRIVEN CANCER DRUG APPROVALS IN PHASE II VERSUS PHASE III CLINICAL TRIALS WITHIN THE PAN-CANADIAN ONCOLOGY DRUG REVIEW (pCODR) GROUP

YING WANG1, PETER ELLIS1
1McMaster University, Department of Oncology

OBJECTIVES
The advent of molecular testing has resulted in the identification of subgroups of cancers, often representing small populations of patients. This creates challenges in conducting large phase III, randomized trials. We hypothesize that drug submissions to pCODR for these small subgroups of patients, are disadvantaged because of the difficulty in obtaining phase III data.

METHODS
We conducted a retrospective review of anti-cancer drug submissions reviewed by pCODR since its inception from July 2011 to Dec 2017, excluding pediatric submissions. Variables of interest included pCODR decisions, phase of trials, alignment with patient values, needs, cost-effectiveness, net clinical benefit, line and intent of therapy, targeted versus non-targeted indication, size of target population, and monthly drug costs. Logistic regression models were constructed to examine the effect of the level of evidence and other factors on the recommendations made by pCODR.

RESULTS
A total of 100 submissions were assessed, 18 based on phase II evidence, 95 for palliative treatments, and 23 without current standard-of-care treatment. Phase II trials were more likely intended for later lines of therapy (p=0.007). pCODR is 5.3 times more likely to approve new drugs based on phase III versus phase II evidence (p=0.003). This remains significant when adjusted for the line and intent of therapy, targeted versus other therapy, size of the target population, and the monthly cost of drug (p=0.012). Therapies are also more likely to be approved if pCODR concludes there to be alignment with patient values (p = 0.013), and a clinical need for treatment in the area (0.002).

CONCLUSION
The current pCODR drug approval process appears to disadvantage uncommon/rare subgroups of cancer patients where phase III clinical trials are challenging to conduct. Further research is required to delineate a drug approval process that is more applicable to these small patient populations.
Abstract #40_CAMO_2018
THE IMPACT OF CHRONIC KIDNEY DISEASE IN LOCALLY ADVANCED RECTAL CANCER PATIENTS TREATED WITH NEOADJUVANT CHEMORADIATION
Shaan Dudani¹, Horia Marginean¹, Joanna Gotfrit², Patricia A. Tang², Jose Monzon², Kristopher Dennis¹, Hagen Kennecke³, Erin Powell⁴, Sam Babak⁴, Winson Y. Cheung², and Michael M. Vickers¹, on behalf of the Cancer Health Outcomes Research Database (CHORD) Consortium
¹The Ottawa Hospital Cancer Center/University of Ottawa, Ottawa, ON
²Alberta Health Services/University of Calgary, Calgary, AB
³British Columbia Cancer Agency, Vancouver, BC
⁴Dr. H. Bliss Murphy Cancer Clinic/Memorial University, St. John’s, NL

OBJECTIVE
To assess the impact of chronic kidney disease (CKD) on outcomes in patients with locally advanced rectal cancer (LARC) undergoing neoadjuvant chemoradiation (nCRT).

METHODS
We reviewed patients with LARC undergoing nCRT prior to curative intent surgery from 2005-2013 across four Canadian provinces. Data regarding demographics, staging, renal function, treatments and outcome were collected. CKD was defined as having an estimated glomerular filtration rate (eGFR) (Cockcroft-Gault) <60 ml/min. Primary endpoints were neoadjuvant treatment completion rate, pathologic complete response (pCR), disease-free survival (DFS), and overall survival (OS). Logistic regression and Cox proportional hazard models were used to assess for an association between renal function and outcomes.

RESULTS
1119 (71%) of 1580 patients were included for analysis. Median age was 61 (IQR 54-69), 70% male, 84% performance status 0-1. Median eGFR was 93 ml/min (IQR 74-114), with 11% <60 ml/min (n=120). 53% received 5-fluorouracil and 44% received capecitabine as neoadjuvant chemotherapy (nCT). 84% completed nCT, 95% completed neoadjuvant radiotherapy (nRT), and 76% received adjuvant chemotherapy (aCT). Patients with CKD were less likely to receive aCT (62% vs 78%; p<0.01). There was no significant difference in completion rate of nCT (80% vs 85%; p=0.15) or nRT (93% vs 95%; p=0.20) based on renal function. 194 (17%) patients had a pCR. After a median follow up time of 62 months, 8% developed local recurrence, 22% developed distant recurrence and 21% have died. 5-year OS and DFS were 78% and 68%, respectively. Patients with CKD had decreased OS on univariate analysis (HR 1.58, 95%CI 1.10-2.27; p=0.01), but not on multivariate analysis. There were no significant differences in DFS or pCR rates based on renal function.

CONCLUSION
In LARC pts undergoing nCRT, CKD was associated with less use of aCT but did not have any independent association with neoadjuvant treatment completion rate, pCR, DFS or OS.
Abstract #41_CAMO_2018
ASSESSING THE ADDED UTILITY OF PETCT OVER CONVENTIONAL IMAGING IN THE INVESTIGATION AND MANAGEMENT OF OVARIAN CANCER
Dr Sarah Cook, Maral Pourghiasian, Dr Don Wilson and Dr Anna V. Tinker
BC Cancer Agency, Vancouver

BACKGROUND
Evidence supports PET-CT in nodal assessment of epithelial ovarian cancer (EOC) during staging; and investigation of recurrence, where it provides superior sensitivity and specificity over conventional imaging (CI). Limited data suggests PET-CT impacts EOC management in 34% to 57% of cases, including when CI has recently been performed. This study evaluated whether PET-CT provides additional information over CI in EOC and if results influence management.

METHODS
All EOC patients who underwent publicly funded PET-CT at BC Cancer Agency AND recent (< 6 weeks) CI were eligible. Medical charts were retrospectively reviewed with descriptive analysis performed.

RESULTS
Of 270 PET-CT scans performed between January 2007 and Sept 2017, 106 had recent CI, thus were eligible. Most common PET-CT indications were: 1) investigating suspected first recurrence (30.2%), 2) assessment for secondary debulking (21.7%) and 3) assessment for progression following documented recurrence (19.8%).

PET-CT identified greater disease burden than CI in 39.6% of cases, typically greater nodal involvement. PET-CT identified lower disease burden than CI in 14.2% of cases. However, in 77.4% of all cases, PET-CT and CI had the same clinical implications.

In 33.0% of cases, management changed following PET-CT from; no treatment to treatment (17.9%), adoption of a different treatment (10.4%) and from treatment to no treatment (4.7%). In the 22.6% of cases where PET-CT and CI drew different clinical implications, management changed in 41.7%.

CONCLUSION
Overall, PET-CT was relatively rarely used to investigate EOC. Although PET-CT provided greater detail regarding disease burden which may be important in select cases, we demonstrate that PET-CT and CI often resulted in the same clinical implications. Thus, for the majority CI was sufficient. While treatment changes following PET-CT were frequently seen, impact on true clinical outcomes remains unknown. Use of PETCT in the care of patients with EOC should therefore remain individualized.
Abstract #43_CAMO_2018
QUALITY OF PHASE 0 AND WINDOW-OF-OPPORTUNITY TRIAL DEFINITION AND REPORTING
Omar F. Khan1, Sunil Parimi2, Hatim Karachiwala3, Yongtao Lin4, Jose G. Monzon5, Vincent C. Tam2, Eric X. Chen6, Janet E. Dancey7, Patricia A. Tang5
1Department of Oncology, University of Calgary, Calgary, Alberta, Canada
2British Columbia Cancer Agency, Victoria, British Columbia, Canada
3Central Alberta Cancer Centre, Red Deer, Alberta, Canada
4Health Information Network Calgary, Calgary, Alberta, Canada
5Department of Oncology, University of Calgary, Calgary, Alberta, Canada
6Princess Margaret Cancer Centre, University Health Network, University of Toronto, Toronto, Ontario, Canada
7Department of Oncology, Queen’s University, Kingston, Ontario, Canada

OBJECTIVE
This study assessed utilization trends and the quality of reporting for Phase 0 (Ph0) and window-of-opportunity (WoO) trials.

METHODS
Trials from 1974-2017 were identified using MEDLINE, EMBASE and PubMed to assess quality of Ph0 and WoO trial reporting. To ensure data integrity, half of the data was assessed by a second reviewer; discrepancies were resolved through discussion and consensus with a third reviewer. Trial data was compared to definitions of Ph0 and WoO trials previously established based on a survey of 113 experts across North America.

RESULTS
One hundred (28 Ph0 and 72 WoO) trials were identified, with most trials (78.0%) reported after 2010 (Figure 1). Ph0 and WoO trials most commonly studied breast (38.0%) and head/neck (11.0%) malignancies, with limited representation of gastrointestinal (3.0%) and genitourinary (6.0%) malignancies (Figure 2). Nearly all Ph0 (96.4%) and most WoO (75.0%) trials explicitly stated the type of trial. Almost all trials (85.7% of Ph0 and 93.1% of WoO) specified drug formulation and initial dosing, but 39.3% of Ph0 trials did not clearly delineate dose escalations. Most trials (67.9% of Ph0 and 55.6% of WoO) did not specify whether primary treatment was delayed while participating in the trial. Ph0 trials were most likely to assess pharmacokinetic outcomes (82.1%), while WoO trials were more likely to assess pharmacodynamic outcomes (75.0%). Relatively few Ph0 (14.3%) and WoO (31.9%) trials assessed clinical efficacy outcomes. Toxicities were inconsistently reported (Ph0 50.0% and WoO 65.3%).

CONCLUSION
While the utilization of Ph0 and WoO trials is increasing, the number of trials remains low, and many tumour sites are under-represented. Additionally, trials inconsistently report methods, outcomes and toxicities. Clear consensus definitions to guide Ph0 and WoO trials are needed to improve the quality of trial reporting.
Abstract #43_CAMO_2018 (continued)
QUALITY OF PHASE 0 AND WINDOW-OF-OPPORTUNITY TRIAL DEFINITION AND REPORTING

Figure 1. Number of Ph0 and WoO trials reported for each year between 1993 and 2017 (no Ph0 or WoO trials were reported prior to 1993).

Figure 2. Ph0 and WoO trials reported between 1974-2017, sorted by tumour site.
Abstract #45_CAMO_2018
DIFFERENTIAL OUTCOMES BETWEEN 1\textsuperscript{ST} AND 2\textsuperscript{ND} GENERATION TKIS IN PATIENTS WITH ACTIVATING EGFR MUTATIONS IN NSCLC
Sally C. Lau\textsuperscript{1}, Negar Chooback\textsuperscript{2}, Cheryl Ho\textsuperscript{1}, Barbara Melosky\textsuperscript{3}
\textsuperscript{1}Department of Medical Oncology, BC Cancer, University of British Columbia, Vancouver BC
\textsuperscript{2}Department of Medical Oncology, Queen’s University, Kingston ON

BACKGROUND
Both first (1G) and second generation (2G) EGFR tyrosine kinase inhibitors (TKIs) have efficacy in NSCLC with activating EGFR mutations (EGFRM+). Previous studies examining differences in EGFR TKIs and mutational subtypes have mixed overall survival (OS) results. We aimed to characterize the patterns of use of 1G and 2G TKIs and any outcome differences with mutation subtype in the real-world setting.

METHODS
A retrospective review of all advanced EGFRM+ NSCLC patients treated with TKIs between the years 2011-2015 at BC Cancer was performed. Multivariate regressions were performed to examine for associations of OS, treatment and mutation subtypes.

RESULTS
In total, 500 patients were identified. 283 patients had an exon 19 deletion (del19), 185 had an exon 21 L858R mutation and 32 were variants or unspecified. Baseline characteristics in the del19 vs L858R group were similar: 69%/66% were female, 66%/71% were never smokers, 20%/20% had CNS metastases and 41%/37% received ≥2 lines of therapy (all p>0.05). The del19 cohort had less Asians (46% vs. 58%, p=0.02) and were younger (median age 63 vs. 69, p=0.02). In the del19/L858R cohorts, 81%/19% and 84%/16% received a 1G and 2G TKI respectively. OS in the entire cohort was 26 months, with the del19 surviving longer (27 vs. 22 months, p<0.01). In multivariate analyses, del19 (HR 0.7, p<0.01) and treatment with a 2G TKI (HR 0.63, p=0.01 95%CI 0.4-0.9) were associated with better OS. First line treatment with a 2G TKI was associated with better OS only in the del19 cohort. 43% of patients receiving a 2G TKI required a dose reduction for toxicity.

CONCLUSIONS
Use of a 2G TKI in EGFRM+ advanced NSCLC is associated with improved OS. This was significant in the entire group and in the del19 cohort. This support using the mutational type to help to decide on therapy chosen.
Abstract #48_CAMO_2018
THE IMPACT OF SOCIOECONOMIC FACTORS ON OUTCOMES OF PATIENTS WITH RECTAL CANCER
Joanna Gotfrit, Tharshika Thangarasa, Horia Marginean, Shaan Dudani, Patricia A. Tang, Jose Monzon, Kristopher Dennis, Hagen Kennecke, Winson Y. Cheung, and Michael M. Vickers, on behalf of the CHORD Consortium

1The Ottawa Hospital Cancer Center/University of Ottawa, Ottawa, ON
2Alberta Health Services/University of Calgary, Calgary, AB
3British Columbia Cancer Agency, Vancouver, BC

OBJECTIVE
We assessed the impact of socioeconomic factors on outcomes in patients with locally advanced rectal cancer (LARC) who received neoadjuvant chemoradiation (nCRT).

METHODS
We reviewed patients with LARC undergoing nCRT and surgery from 2005-2013 across 3 Canadian provinces. Data regarding demographics, staging and outcome were collected. Using 2015 Canadian Census data we assessed community characteristics. We calculated distance and time to the nearest cancer center using mapping software.

RESULTS
1152 patients were included. See Table 1 for baseline patient and community characteristics. The median follow-up time was 67.8 months (95% CI 65.8-70.3). 81% completed neoadjuvant chemotherapy, 94% completed neoadjuvant radiation treatment, and 72% completed adjuvant chemotherapy. 18% of patients had a pathologic complete response (pCR). The survival rate was 0.90 (95% CI 0.88-0.92) after three years, and 0.80 (95% CI 0.77-0.82) after five years.

Population density had no impact on death (HR 1.00; 95% CI 0.99-1.0; p=0.70), nor did rural vs. urban status. Median community household income >$50,000 was significantly associated with survival (HR 0.71; 95% CI 0.55-0.92; p=0.009). Community proportion with post-secondary education was significantly associated with survival (HR 0.99; 95% CI 0.979-0.996; p=0.005). Comparing patients living <100 km vs >100km from the cancer centre, distance had no impact on death (HR 1.37; 95% CI 0.97-1.92; p=0.072). Driving time >1 hour was associated with death (HR 1.27; 95% CI 1.12-1.85; p=0.040).
Abstract #48_CAMO_2018 (continued)

THE IMPACT OF SOCIOECONOMIC FACTORS ON OUTCOMES OF PATIENTS WITH RECTAL CANCER

CONCLUSION

Outcomes of patients with LARC undergoing nCRT are significantly associated with several factors including community household income, community post-secondary education and driving time to the nearest cancer centre. We must strive to understand and reduce socioeconomic disparities.

Table 1

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median years (IQR)</td>
<td>62 (IQR 54-70)</td>
</tr>
<tr>
<td>Male</td>
<td>68%</td>
</tr>
<tr>
<td>Location of residence</td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td>44%</td>
</tr>
<tr>
<td>British Columbia</td>
<td>20%</td>
</tr>
<tr>
<td>Ontario</td>
<td>36%</td>
</tr>
<tr>
<td>Population density of community, median</td>
<td>2,356/km²</td>
</tr>
<tr>
<td>Community type</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>16%</td>
</tr>
<tr>
<td>Small population centre</td>
<td>13%</td>
</tr>
<tr>
<td>Medium population centre</td>
<td>6%</td>
</tr>
<tr>
<td>Large population centre</td>
<td>65%</td>
</tr>
<tr>
<td>Community household income</td>
<td></td>
</tr>
<tr>
<td>Median (IQR)</td>
<td></td>
</tr>
<tr>
<td>Greater than $50,000</td>
<td>$39,827 (IQR 32,096-47,488)</td>
</tr>
<tr>
<td>Proportion with post-secondary education in community, median (IQR)</td>
<td>66% (55-76)</td>
</tr>
<tr>
<td>Distance to the cancer centre &gt;100km</td>
<td>13%</td>
</tr>
<tr>
<td>Driving time to the cancer centre &gt;1 hour</td>
<td>18%</td>
</tr>
</tbody>
</table>
Abstract #49_CAMO_2018

UTILIZATION OF PREVENTIVE CARE AMONG COLON CANCER SURVIVORS

Sally C. Lau1, Richard M. Lee-Ying1, Davis Sam1, Winson Y. Cheung2

1Department of Medical Oncology, BC Cancer, University of British Columbia, Vancouver BC, Canada
2Department of Medical Oncology, Tom Baker Cancer Centre, University of Calgary, Calgary AB, Canada

BACKGROUND

Many cancer patients are long-term survivors. The care of these cancer survivors (CS) is unique and represent an area of unmet need. We aim to characterize the patterns of preventive care in colon CS compared to non-cancer controls (NCC) and identify areas of deficiencies within a universal health care system.

METHODS

Adult patients with non-metastatic colon cancer treated at BC Cancer between 2000-2012 were included. An age and gender matched cohort was constructed from the provincial database to serve as NCC. Aspects of preventive care examined include vaccinations, cancer, osteoporosis and cardiovascular diseases (CVD) screening. Multivariate regressions were done to test for associations between CS and preventive care.

RESULTS

In total, 9381 colon CS and 47187 NCC were analyzed, matched at a ratio of 5:1. Among CS, median age of diagnosis was 68, 58% were male and 47% had stage 3 disease. The median overall survivals were 12/10/8 years for stages 1/2/3 disease respectively. 61% of these survivors died from colon cancer, 12% from other cancers and 25% from non-cancer causes. In CS/NCC cohorts, 90%/85%, 47%/39% and 53%/46% of eligible patients had CVD screening, cancer screening and other preventive care respectively. This remained significant in multivariate analyses (all p<0.01). Patients who were female, had higher income and resided in urban areas were more likely to participate in screening. Among CS, patients >65 years (OR 1.2, p=0.04 95%CI 1.0-1.4), females (OR 1.5, p<0.01 95%CI 1.3-1.8) and stages 1 or 2 disease (OR 1.3, p<0.01 95%CI 1.1-1.5) had higher uptake of screening.

CONCLUSIONS

CS are more likely to receive screening but uptake remains suboptimal in certain areas. Targeted education towards certain sub-groups such as males, ≤65 years, low income and rural patients may improve long term health outcomes.
Abstract #50_CAMO_2018

UNNECESSARY IMAGING FOR METASTASES IN EARLY BREAST CANCER PATIENTS IN ALBERTA

Dr. Ayesha Bashir¹, Derek Tilley¹, Brae Surgeoner², Dr. Sasha Lupichuk¹; ¹Medical Oncology Department, University of Calgary, AB; ²Knowledge Management Specialist, Guideline Resource Unit, AHS; ³Tom Baker Cancer Centre, Department of Medical Oncology, Calgary, AB

OBJECTIVE
To determine the rate of PET, CT and radionuclide bone scan usage over time (2011-2015) for the detection of metastasis in asymptomatic patients with newly diagnosed DCIS and Stage I/II breast cancer in Alberta. Unnecessary imaging for metastases in early breast cancer leads to increased patient anxiety, management delays, and substantially higher health care costs.

METHOD
This is a retrospective cohort study. We included all DCIS and stage I/II plus de novo stage IV breast cancer patients diagnosed from Jan 1, 2011 through Dec 31, 2015. Patient, tumour and treatment information was retrieved from ACR, and CMORE. All PET, CT, bone scan plus CXR, non-breast U/S, non-breast MRI and non-breast image guided biopsies performed during staging window were recorded. Staging window started from date of first biopsy confirming DCIS or invasive cancer to the definitive surgical date plus 4 months. Imaging data was obtained through both Alberta Health and the Diagnostic Imaging (DI) Services. All patients with DCIS or Stage I/II, who did not undergo definitive breast surgery (mastectomy or breast conserving plus sentinel node biopsy and/or axillary node dissection), were excluded from the study.

RESULT & CONCLUSION
Electronic chart review is currently under process. Test indications from the DI database and ARIA are being reviewed to identify if patients were symptomatic or asymptomatic, and whether these resulted in follow-up tests or biopsies. For de novo stage IV patients, we are reviewing ARIA to determine if routine imaging identified the metastases.

<table>
<thead>
<tr>
<th>Preliminary Data of Early Breast Cancer Patients from 2011-2015 in Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total No. of Patients</strong></td>
</tr>
<tr>
<td>10,333</td>
</tr>
</tbody>
</table>
Abstract #51_CAMO_2018

ASSESSMENT OF FRAILTY IN MEN WITH METASTATIC PROSTATE CANCER
Jennifer Melvin1, Heather Moffatt1, Paige Moorhouse1, Laurie Mallery2, Kelvin Young1, Robyn Macfarlane2, Kara Matheson2, Lori Wood1
1.Divison of Medical Oncology, Dalhousie University at Queen Elizabeth II Health Sciences Centre, Halifax, Nova Scotia, Canada
2. Division of Geriatric Medicine, Dalhousie University at Queen Elizabeth II Health Sciences Centre, Halifax, Nova Scotia, Canada
3. Research Method Unit, Nova Scotia Health Authority, Dalhousie University, Halifax, Nova Scotia, Canada

OBJECTIVE
The objectives of this study were to quantify frailty in elderly patients with metastatic prostate cancer (mPC) using the Frailty Assessment for Care-planning Tool (FACT); to evaluate health outcomes in this patient population; and to determine if frailty assessment influences treatment decisions.

METHODS
A prospective cohort study evaluated frailty in new patients age ≥ 75 years, who were seen in the medical oncology clinic with metastatic prostate cancer between September 2016 and December 2017. Frailty was assessed using the FACT (4 domains assessed on a 7 point ordinal scale). A cumulative logit model was used to explore the relationship between the frailty and independent variables, such as the ECOG Performance Status (PS) and mortality. Rank ordered analysis of variance was used to investigate the relationship between frailty score and age at initial consult, as well as frailty score and duration of androgen deprivation therapy (ADT).

RESULTS AND CONCLUSIONS
Twenty eight patients consented and underwent FACT screening (mean age 83, range 75-94). Most had castrate resistant mPC (71%), and the remainder had hormone sensitive mPC (29%). At initial consult, 3 (11%) patients were aging normally, 11 (39%) were vulnerable, 13 (46%) had mild-moderate frailty and 1 (4%) was severely frail. The frailty assessment resulted in changing the pre-consult plan in only 1 (4%) patient. Eighty-two percent of patients underwent systemic treatment (hormone therapy in 61%, chemotherapy in 39%). Although there was a statistically significant relationship between ECOG PS and frailty score (p=0.0485), there was wide variability in frailty level in patients with ECOG 0-1 (FACT score range 1-4). No statistically significant relationship was identified in duration of ADT or age to frailty score. This study demonstrates the high prevalence of frailty in elderly patients with mPC.
Abstract #08_CAMO_2018

INSTITUTIONAL PRACTICE PATTERNS FOR THE USE OF NEOADJUVANT SYSTEMIC THERAPY FOR BREAST CANCER: A RETROSPECTIVE ANALYSIS

Lara Zibdawi\(^1\), Demetrios Simos\(^2\), Shaqil Kassam\(^2\), Amira Rana\(^2\), Farrah Kassam\(^2\), Yasmin Rahim\(^2\)

\(^1\) University of Waterloo, Applied Health Sciences Department, Kinesiology, Waterloo, Ontario, Canada, N2L 3G1
\(^2\) Stronach Regional Cancer Centre, Division of Medical Oncology and Hematology, Newmarket, Ontario, Canada, L3Y 2P9

RATIONALE
There is a paucity of real life data describing the clinical practice patterns around the use of neoadjuvant systemic therapy (NAST) for early-stage operable breast cancer (ESOBC) and locally-advanced breast cancer (LABC) patients.

OBJECTIVES
To describe the institutional practice patterns regarding the use of NAST in a large Canadian Community Cancer Centre.

METHODS
A retrospective chart analysis of all patients diagnosed with breast cancer (BC) between May 1, 2010 and October 31, 2016 who went on to receive NAST.

RESULTS
1,979 pts with a new diagnosis of BC were identified, 154 (7.8%) had NAST and 146 (94.8%) were eligible for data extraction and analysis. The proportion of pts receiving NAST increased from 4.5% in 2010 to 7.1% in 2016. Of the 146 pts receiving NAST, 6.2% were identified as having ESOBC. Pts who received NAST were generally younger, had fewer comorbidities, larger primary tumors, axillary adenopathy, higher tumor grade, and hormone receptor (HR) positive disease. Pathological complete response rates were as follows: 56.3% in HR-/HER2+, 37.9% in HR+/HER2+, 29.3% in triple negative, and 5.0% in HR+/HER2-. Breast conserving surgery (BCS) increased modestly over the study time period, with 17.1% receiving this limited surgery. However, there was a 36.4% decrease in the rate of axillary lymph node dissection (ALND) for pts with clinical N1 (cN1) disease.

CONCLUSIONS
There has been a modest increase in the use of NAST at our institution over the study period. We believe this is likely a reflection of increasing case discussions at our multidisciplinary meetings. In our data set, the rate of post-NAST mastectomies has changed little but more women with cN1 disease appear to have been spared from undergoing more extensive axillary surgery.
IDENTIFYING GERIATRIC COMPETENCIES FOR THE MEDICAL ONCOLOGY TRAINEE - A DELPHI CONSENSUS OF NORTH AMERICAN MEDICAL AND GERIATRIC ONCOLOGISTS

Tina Hsu, William Dale, Ajeet Gajra, Holly Holmes, Elizabeth Kessler, Ron Maggiore, Allison Magnusson, Ira Parker, Arti Hurria

1The Ottawa Hospital Cancer Centre, University of Ottawa; 2University of Chicago Medical Center, University of Chicago; 3Upstate Cancer Center, Upstate Medical University; 4University of Texas Health Science Center at Houston, UTHealth Medical School; 5University of Colorado School of Medicine; 6University of Rochester Medical Center; 7ElderCare Mediation Solutions; 8City of Hope National Comprehensive Cancer Center

INTRODUCTION
Aging will account for the majority of predicted cancer growth. Oncology trainees receive little training in caring for older adults and there is no consensus on what trainees should know about geriatric oncology (GO). We sought to identify GO competencies medical oncology trainees should possess.

METHODS
A modified Delphi of GO and oncology education experts was conducted. Potential GO competencies were identified through review of published needs assessments and existing oncology curricula. Experts categorized when proposed competencies should be attained: internal medicine, oncology, or GO training. Consensus was obtained if 2/3 of the experts agreed on the stage of training at which the competency should be attained.

RESULTS
Thirty-three experts in geriatric oncology GO (n=18) and oncology education (n=15) participated. Respondents were trained in oncology (73%), geriatrics (36%), or both (19%); 42% are involved in a geriatric oncology clinic; 52% were in practice for 5-10 years and 26% for >20 years.

An initial list of 46 potential competencies were identified by the investigators. Respondents suggested 22 additional competencies, which were incorporated the Delphi. Response rates were 82-100%. After three rounds of ranking, 45.6% (n=31) of proposed competencies were ranked at the oncology level. Strongest consensus was for the following competencies:

- Describe biological and psychosocial changes that occur with aging and their implications regarding cancer and cancer care
- Recognize the heterogeneity of aging in older adults with cancer
- Describe factors that may impact an older person's preferences with respect to cancer therapy

CONCLUSIONS
Experts in GO and oncology education agreed upon a set of GO competencies appropriate for oncology trainees. These results will form the groundwork for developing a GO curriculum for medical oncology trainees.
Abstract #32_CAMO_2018
BRINGING THE TEAMS TOGETHER TO INCORPORATE A PERSONALIZED MULTIFACETED CARE PLAN INTO THE STANDARD CARE OF BREAST CANCER: A QUALITY IMPROVEMENT PROJECT
Rashida Haq1,2, Christine Brezden-Masley1,2, Ronita Lee1,2, Geetha Mukerji2,3, Pauline Gulasingam1, Amy Kong1
1Department of Hematology & Oncology, St. Michael’s Hospital, Toronto, Ontario
2University of Toronto, Toronto, Ontario
3Women’s College Hospital, Toronto, Ontario

OBJECTIVE
The objective was to assess the feasibility of implementing a personalized multifaceted care plan (PMCP) to improve cancer care in oncology clinics.

METHODS
Patients diagnosed with invasive breast cancer and receiving chemotherapy at St. Michael’s Hospital were recruited. Patients and their family physicians (FPs) received a PMCP containing the patient’s diagnosis, pathology, treatment and follow-up information compiled by their care team and research staff using a database application. The primary outcome was the proportion of eligible patients who received a completed PMCP. Questionnaires were also administered to assess patient and care provider satisfaction with the PMCP. Data was shared at team meetings and ongoing practice patterns were observed for changes, which were incorporated to subsequent PDSA (plan, do, study, and act) cycles.

RESULTS
From March – December 2017, 63/69 eligible patients were recruited and received the PMCP. Interim results showed increased uptake from 88% (36/41) to 96% (27/28) during the two completed PDSA cycles. Furthermore, 86% of patients felt the PMCP helped them ask the right questions throughout their treatment and 88% felt it guided them to actively participate in their cancer care. However, 48% reported that the PMCP lacked information on lifestyle modifications. FPs found the PMCP useful for understanding their patient’s cancer treatment, and oncologists agreed that it should be incorporated into patient care.

CONCLUSION
Implementation of the PMCP is feasible as shown with increased uptake. Patients who received a PMCP felt empowered and more involved in their cancer care. The iterative process and refinements to date with the PMCP and utilization of a common platform have brought the teams together for patient-centered care. Refinements related to lifestyle modifications will be made in subsequent PDSA cycles.
Abstract #35_CAMO_2018
WILL WOMEN WITH BREAST CANCER (BC) BE WILLING TO TAKE ADJUVANT PALBOCICLIB IN ADDITION TO STANDARD ENDOCRINE THERAPY (ET)?
Jessica Jesin1, Danielle Desautels2, Alex Kiss3, Ellen Warner1,3, Katarzyna J. Jerzak1,3
1Sunnybrook Odette Cancer Centre, University of Toronto, Ontario, Canada
2CancerCare Manitoba, University of Manitoba, Ontario, Canada.
3Sunnybrook Research Institute, University of Toronto, Ontario, Canada

OBJECTIVE
To estimate the percentage of potentially eligible women who would be willing to take palbociclib in addition to adjuvant ET for BC.

METHODS USED
We surveyed post-menopausal women with non-metastatic ER+ BC who initiated adjuvant ET within the past 2 years. Sequential out-patients (n=164) were recruited until a convenience sample of 100 women was obtained. Participants were asked about their willingness to accept an oral drug for the prevention of BC recurrence for a range of baseline recurrence risks in 2 hypothetical scenarios, both requiring monthly bloodwork, assuming that the drug caused i) no side effects or ii) mild fatigue only. In a 3rd scenario patients were asked for what absolute risk reduction they would take the drug if it caused fatigue and rarely infection or bleeding. For each scenario, the drug was presented as providing a constant 40% relative risk reduction

RESULTS OBTAINED
Mean age of participants was 62, 79% had lymph node negative disease, and their median duration on tamoxifen (36%) or an aromatase inhibitor (64%) was 13 months. The likelihood of women taking the drug with varying hypothetical baseline risks of recurrence and side-effects is outlined in Table 1; there was no significant correlation between age group (age≥65 vs <65) and patient responses as evaluated using Chi-square or Fisher exact tests. For the scenario including rare infection or bleeding the mean absolute risk reduction women would need to take the drug was 34%.

CONCLUSION
If the ongoing PALLAS trial is positive, a high proportion of ER+ BC patients may not be willing to take an additional adjuvant drug. Results of this study may help provincial funders better estimate the costs of adjuvant palbociclib.

Table 1. Percentage of women who are likely or very likely to take an oral drug in combination with standard ET for early BC

<table>
<thead>
<tr>
<th>Drug does not cause side effects*</th>
<th>Drug causes mild fatigue*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline risk of 50% reduced to 30%</td>
<td>Baseline risk of 20% reduced to 12%</td>
</tr>
<tr>
<td>All comers</td>
<td>84%</td>
</tr>
<tr>
<td>Age&lt;65 (n=57)</td>
<td>89%</td>
</tr>
<tr>
<td>Age≥65 (n=43)</td>
<td>76%</td>
</tr>
<tr>
<td>p-value</td>
<td>0.10</td>
</tr>
</tbody>
</table>

*In all cases, the drug requires monthly blood work and hospital visits.
Abstract #38_CAMO_2018
ARIEL4: AN INTERNATIONAL, RANDOMIZED, PHASE 3 STUDY OF THE POLY(ADP-RIBOSE) POLYMERASE (PARP) INHIBITOR RUCAPARIB VERSUS CHEMOTHERAPY AS TREATMENT FOR BRCA1- OR BRCA2-MUTATED RELAPSED OVARIAN CANCER (OC)

Stephanie Lheureux1, Paul Bessette2, Prafull Ghatage3, Susie Lau4, Johanne Weberpals5, Chris Tankersley6, Tracy Lou6, Rebecca S. Kristeleit7, Amit Oza1

1Princess Margaret Hospital, Toronto, ON, Canada
2CIUSSS de l’Estrie CHUS, Sherbrooke, QC, Canada
3Tom Baker Cancer Center, Calgary, AB, Canada
4McGill University - Jewish General Hospital, Montréal, QC, Canada
5The Ottawa Hospital - General Campus, Ottawa, ON, Canada
6Clovis Oncology, Inc., Boulder, CO, USA
7University College London Cancer Institute, London, UK

OBJECTIVE
Data comparing PARP inhibitors to standard of care chemotherapy for treatment of relapsed OC are limited. ARIEL4 (NCT02855944) is evaluating rucaparib versus standard of care chemotherapy as treatment for patients with relapsed high-grade OC (regardless of histology) and a deleterious germline or somatic BRCA1 or BRCA2 mutation who have received ≥2 prior chemotherapy regimens.

METHODS
Patients (N=345) stratified by progression-free interval after their most recent platinum regimen will be randomized 2:1 to receive rucaparib 600 mg BID or chemotherapy. Patients with platinum-resistant (progressive disease ≥1 to <6 months after last platinum) or partially platinum-sensitive disease (progressive disease ≥6 to <12 months after last platinum) will receive rucaparib or weekly paclitaxel. Patients with platinum-sensitive disease (progressive disease ≥12 months after last platinum) will receive rucaparib or investigator’s choice of platinum-based therapy as standard of care, either single-agent platinum (cisplatin or carboplatin) or doublet chemotherapy (carboplatin/paclitaxel, carboplatin/gemcitabine, or cisplatin/gemcitabine). Patients receiving chemotherapy may cross over to rucaparib upon radiographic disease progression. The primary endpoint is investigator-assessed progression-free survival (per RECIST version 1.1). Secondary endpoints include overall survival, investigator-assessed objective response rate per RECIST, objective response rate per RECIST/CA-125 criteria, duration of response, and patient-reported outcomes. Key exploratory objectives will include assessment of molecular changes in tumor samples over time, use of cell-free tumor DNA as a marker for response, and pharmacokinetics analysis. Safety will be summarized descriptively using standard adverse event reporting.

RESULTS AND CONCLUSIONS
ARIEL4 is actively recruiting patients. Randomized studies such as ARIEL4 are needed to assess the benefit-risk profile of PARP inhibitors versus standard of care chemotherapy as treatment for relapsed high-grade OC.
Abstract #39_CAMO_2018
THE TRITON CLINICAL TRIAL PROGRAM: EVALUATION OF THE POLY(ADP-RIBOSE) POLYMERASE (PARP) INHIBITOR RUCAPARIB IN PATIENTS WITH METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (mCRPC) ASSOCIATED WITH HOMOLOGOUS RECOMBINATION DEFICIENCY (HRD)


1Princess Margaret Hospital, Cancer Clinical Research Unit, Toronto, Ontario, Canada
2Dr. Léon-Richard Oncology Centre, Moncton, New Brunswick, Canada
3London Health Science Centre - Victoria Hospital, London, Ontario, Canada
4CancerCare Manitoba, Winnipeg, Manitoba, Canada
5Juravinski Cancer Centre Hamilton Health Services, Hamilton, Ontario, Canada
6The Ottawa Hospital Cancer Centre, Ottawa, Ontario, Canada
7Clavis Oncology, Inc., Boulder, CO, USA
8Memorial Sloan Kettering Cancer Center, New York, NY, USA
9UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA, USA
10Guy’s Hospital & Sarah Cannon Research Institute, London, UK

OBJECTIVE
The TRITON2 and TRITON3 studies aim to evaluate rucaparib in patients with mCRPC associated with HRD.

METHODS
TRITON2 (NCT02952534) is a phase 2 study evaluating rucaparib (600 mg BID) in patients with mCRPC (N=160) harboring a deleterious germline or somatic BRCA1, BRCA2, or ATM mutation. An exploratory cohort will enroll patients with an alteration in any of 12 other prespecified homologous recombination genes (eg, RAD51C, RAD51D, or PALB2). Patients must have progressed on androgen receptor (AR) signaling–directed therapy and 1 prior taxane-based chemotherapy for mCRPC. The primary endpoint of TRITON2 is response rate (per modified RECIST v1.1/PCWG3) in patients with soft-tissue disease and PSA response in patients with nonmeasurable disease. TRITON3 (NCT02975934) is a randomized phase 3 study evaluating rucaparib versus physician’s choice of abiraterone, enzalutamide, or docetaxel in patients with mCRPC (N=400) harboring a deleterious germline or somatic BRCA1, BRCA2, or ATM mutation. Patients must have progressed on AR signaling–directed therapy for mCRPC; prior chemotherapy for mCRPC or prior use of PARP inhibitors are exclusions. Patients will be randomized 2:1 to rucaparib or physician’s choice of therapy; the latter group may cross over to rucaparib after independently confirmed radiographic progression. The primary endpoint of TRITON3 is radiographic progression-free survival (per modified RECIST v1.1/PCWG3). Pretreatment blood samples collected from all patients in both trials will enable development of a plasma-based companion diagnostic to select patients for rucaparib.

RESULTS AND CONCLUSIONS
Both trials are actively recruiting. The TRITON program will assess the efficacy and safety of rucaparib in patients with mCRPC associated with HRD.