Conclusions:

0.001). The TONSL-MMS22L complex has recently been shown to be involved in the recovery from replication stress through homologous recombination (Duro et al, 2010; O'Donnell et al, 2010). It physically associates with BRCA1/2, RAD51, and RPA. Our study sought to correlate TONSL complex expression with biochemical relapse in prostate cancer patients.

Methods and Materials: Our cohort consists of 250 patients with D’Amico-classified intermediate-risk prostate cancer, treated with image-guided radiotherapy (IGRT, n = 116) or radical prostatectomy (RadP, n = 134). Pre-treatment biopsies were analyzed using the Affymetrix Oncoscan array. The Phoenix and AUA criteria was used to define biochemical relapse for RadP and IGRT patients respectively. mRNA expression data was taken from the TCGA Provisional cohort using cBioPortal (Gao et al., 2013).

Results: Copy number alterations of TONSL and MMS22L were observed in 31% (n = 78) and 20% (n = 51) of our cohort respectively. They were predominantly gains in TONSL, but losses in MMS22L. TONSL amplification, but not MMS22L, was significantly associated with biochemical recurrence (Chi-square = 12, p < 0.001). TONSL remained significantly associated on multivariate analysis, controlling for tumour stage, Gleason score, and PSA (p < 0.005). In the TCGA cohort, over-expression of TONSL (p < 0.005) as well as other members of the homologous recombination pathway (e.g. RAD51D, BRCA1, XRCC2, POLQ1, TOP3A, etc.) were associated with disease recurrence (p < 0.001).

Conclusions: We identified a novel association of copy-number gain and over-expression of TONSL with biochemical recurrence following radical prostatectomy or image-guided radiotherapy. This points to a potential gene dosage effect and the central role of the homologous recombination pathway in prostate cancer progression.

IMPROVED DISEASE-FREE SURVIVAL WITH ADJUVANT RADIATION THERAPY (RT) IN PATIENTS WITH STAGE IIIC2 ENDOMETRIAL CARCINOMA - EXPERIENCE FROM TWO PROVINCES

Jordan Stosky1, Jenny Ko1, Aalok Kumar2, Anna Tinker1, Caroline Holloway1, Corinne Doll1, Robyn Banerjee1, Fleur Huangs, Rahul Arora1, Tien Phan1

1University of Calgary, Calgary, AB
2University of British Columbia, Abbotsford, BC

Purpose: Surgery and post-operative adjuvant chemotherapy are the mainstay of treatment for patients with Stage IIIC2 endometrial cancer. The benefit of post-operative adjuvant radiotherapy (RT) is not as well defined. The purpose of this study was to compare the patterns of failure and survival in patients with Stage IIIC2 endometrial cancer, treated with or without post-operative RT, between two provinces where patterns of practice differ.

Methods and Materials: Consecutive patients diagnosed with FIGO Stage IIIC2 endometrial cancer from 2000-2010 were identified through two provincial cancer registries. Clinicopathologic characteristics, treatment variables (adjuvant chemotherapy, radiation therapy), and outcomes (patterns of failure, disease-free survival (DFS) and overall survival (OS)) were analyzed. Statistical analysis was performed on stata 14.

Results: Fifty patients with FIGO Stage IIIC2 endometrial cancer were identified. Twenty-three (46%) received adjuvant RT and 27 (54%) did not receive any adjuvant RT (RT versus NRT). Ten received external beam RT (EBRT) to pelvic +/- para-aortic lymph nodes only; one received vaginal brachytherapy only; 11 received both (one unknown). The median age at diagnosis was 55 for the RT group and 69 for NRT group. Grade, histology, and depth of myometrial invasion were similar in both groups. The RT group received a median of three cycles of adjuvant chemotherapy, while the NRT group received cycles in 12 of the 29 patients (52%) in the RT group and 21 patients (78%) in the NRT group had disease relapse. Distant and abdominal relapse rates were lower in the RT versus NRT groups, (30 versus 44%, and 26 versus 48%, respectively); pelvic/vaginal relapses (17 versus 15%) were similar. Median DFS was better in RT group (26.7 versus 12.5 months, p = 0.013), while median OS was not significantly different (32.5 versus 29.7 months, p = 0.26). Toxicities for the RT group consisted of Grade 1 and 2 gastrointestinal and genitourinary symptoms and fatigue; Grade 3 toxicities were uncommon. Further data collection to increase sample size is ongoing.

Conclusions: Patients with Stage IIIC2 endometrial cancer who received adjuvant post-operative RT following three cycles of...