IGCS19-0323

85 RESPONSE TO CONCURRENT EXTERNAL BEAM RADIOTHERAPY AND CHEMOTHERAPY AS A NEW PREDICTOR FOR OVERALL SURVIVAL IN LOCALLY ADVANCED CERVICAL CANCER – A RETROEMBRACE STUDY NOMOGRAM

[1]A Sturdza*, [1]R Pötter, [2]M Kossmeier, [3]U Mahantshetty, [1]K Kathrin, [4]C Haie-Meder, [5]JC Lindegaard, [6]I Jürgenliemk-Schulz, [7]LT Tan, [8]P Hoskin, [9]E Van Limbergen, [10]C Gillham, [11]B Segedin, [12]E Tharavichitkul, [13]E Villafranca, [5]L Fokdal, [5]K Tanderup. *[1]Medical University of Vienna, Radiation Oncology, Vienna, Austria; [2]Medical University of Vienna, Statistics, Vienna, Austria; [3]Tata Memorial Hospital, Radiation Oncology, Mumbai, India; [4]Institute Gustave Roussy, Radiation Oncology, Villejuif, France; [5]Aarhus University Hospital, Oncology, Aarhus, Denmark; [6]University Medical Center Utrecht, Radiotherapy, Utrecht, The Netherlands; [7]Cambridge University Addenbrooke's Hospital, Radiotherapy, Cambridge, UK; [8]Mount Vernon Hospital, Radiotherapy, London, UK; [9]University Hospital Gasthuisberg, Radiotherapy, Leuven, Belgium; [10]St Luke's Hospital, Radiation Oncology, Dublin, Ireland; [11]Institute of Oncology Ljubljana, Radiotherapy, Ljubljana, Slovenia; [12]Faculty of Medicine-Chiang Mai University, Radiation Oncology, Chiang Mai, Thailand; [13]University of Navarra-Department of Oncology, Radiation Oncology, Pamplona, Spain*

10.1136/ijgc-2019-IGCS.85

Objectives To present a nomogram for prediction of overall survival (OS) in locally advanced cervical cancer patients (LACC) undergoing definitive radiochemotherapy including image guided adaptive brachytherapy (IGABT).

Methods We retrospectively reviewed 720 patients with LACC acrrued onto the RetroEMBRACE database (12 international institutions). All patients were treated with External Beam Radiotherapy (EBRT) concurrent with Chemotherapy (CHT) and MRI/CT-guided brachytherapy. Missing data (7.2%) were imputed by multiple imputations and predictive mean matching. Stepwise selection of predictive factors with the Akaike information criterion (AIC) was used to obtain a predictive model and construct a nomogram for OS predictions 60 months from diagnosis. The model was internally validated by concordance probability as a measure of discrimination and a calibration plot (both corrected for optimism using bootstrap cross-validation).

Results Through the predictive model (AIC), seven factors were selected to develop the nomogram: FIGO stage (2B vs.1A,1B,2A; 3A,3B,4A,4B vs.1A,1B,2A), age, corpus involvement, lymph node status, concurrent chemotherapy given, overall treatment time, volume of the high risk clinical target volume at the time of first brachytherapy (CTVHR). CTVHR is considered surrogate for response at concurrent EBRT+CHT. This OS nomogram had a satisfactory calibration and useful discrimination (concordance probability c=0.74).

Conclusions Prognostic factors were used to develop the first nomogram for 5-year OS in patients with LACC in the setting of IGABT treatment. Response to concurrent EBRT and CHT (CTVHR) seems to be a new essential outcome predictor for OS. These nomograms can be used to better estimate individual and collective outcomes and may facilitate personalized patient counselling during the treatment.

Poster Discussion with the Professor Station 3

IGCS19-0337

86 SMEAR BIOPSIES FROM GYNECOLOGIC CANCER TISSUES – A PRELIMINARY STUDY USING ATR-FTIR SPECTROSCOPY

[1]I Bruchim*, [2]D Malonekc, [3]G Groisman, [1]R Reens Carmel, [1]M Hallak, [2]D Ben Zion. *[1]Hillel Yaffe Medical Center- Affiliated to the Technion Israel Institute of Technology, Gynecologic Oncology Division, Hadera, Israel; [2]Ruppin Academic Center, School of Engineering, Emek Hefer, Israel; [3]Hillel Yaffe Medical Center- Affiliated to the Technion Israel Institute of Technology, Department of Pathology, Hadera, Israel*

10.1136/ijgc-2019-IGCS.86

Objectives Classification of malignant tissue is performed by histopathology, results of which may be obtained within weeks. Faster histopathology analysis is performed using frozen section (FS) analysis, results of which are available within less than an hour. However, the accuracy of the FS test is lower compared to histopathology. We are proposing a real time method based on IR spectroscopy of liquid biopsy from fresh samples of gynecologic cancer tissues as an alternative to the conventional methods.

Methods 27 biopsies (ovarian and uterine, 17 classified as benign and 10 malignant) were extracted from suspected tumor sites during gynecologic surgical procedures and sent for both pathological and FTIR analyses. Tissue samples were lightly pressed against the surface of an ATR crystal, leaving on its' surface impression smears. Mid-IR absorption spectra were obtained within 15 minutes of excision. Histopathological results of these very same samples were used to develop discriminant models from the absorbance data of the measured smears using machine learning techniques (PCA-LDA and SVM).

Results IR absorbance spectra of malignant smears were consistently higher from spectra of benign smears in the 850–1450 cm-1 range and they were consistently lower in the 3200–3600cm-1 range. The PCA-LDA discrimination model correctly classified the samples with a sensitivity and specificity of 100%, and the SVM showed a training accuracy of 100% and a cross validation accuracy of 91.3%.

Conclusions These preliminary results suggest that ATR-FTIR spectroscopy of tissue smears may have an important role in the development of next-generation techniques for intra-operative tumor classification.