PD1.05 (also presented as P1.49) The Genomics of Young Emergent Lung Cancer

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Background: Lung cancer is increasingly understood as a disease made up of genomically defined subtypes requiring distinct treatment strategies. We hypothesize that young age at diagnosis (< 40 years) is a clinical characteristic associated with an increased chance for a targetable genomic alteration (GA). Our study will prospectively characterize the somatic and germline genomics of young lung cancer.

Method: Accrual opened in July 2014. Patients (pts) are eligible if diagnosed with bronchogenic lung cancer <age 40. The study website, allows for virtual consenting and remote participation from anywhere in the world. We defined 7 GA of interest based on the Lung Cancer Mutation Consortium (LCMC) (EGFR, KRAS, HER2, BRAF, ALK, ROS1, RET). We aim to show the prevalence of targetable GA in our stage 4 adenocarcinoma (AC) pts will be greater in our population compared to the LCMC, with an increase from 35% to 50%; and an improvement in use of targeted therapy from 22% to 40%. Study subjects without a known genotype undergo genomic profiling with the FoundationOne test.

Results: Preliminary results of 71 pts with stage 4 AC show that 82% have either an ALK re-arrangement n=32 (45%), an EGFR activating mutation n=17 (24%), a ROS1 fusion n=5 (7%), a RET fusion n=2 (3%) or a HER2 mutation n=2 (3%). Other GA of interest in those with AC includes TP53, ATM and BRCA2 mutations. 49% of our accrual has come from web based consenting. The majority of subjects have come from North America and Europe; and we would like representation from Latin America.

Conclusion: Thus far in our prospective series our results have far exceeded our statistical expectations, with 82% of our stage 4 AC pts having an actionable mutation. We have defined a genomically enriched subtype of lung cancer and laid the groundwork for further studies of germline and environmental lung cancer risk factors. We are planning a large-scale Case Control study of the Epidemiology of YLC. Web based consenting is a feasible method of bringing research to the patient.

Keywords: Genomics, Young Emergent Lung Cancer, Remote Consenting

PD1.06 (also presented as P2.41) Pembrolizumab vs Docetaxel for Previously Treated NSCLC (KEYNOTE-010): Archival vs New Tumor Samples for PD-L1 Assessment

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Background: In KEYNOTE-010, pembrolizumab demonstrated superior OS over docetaxel in patients with PD-L1-expressing advanced NSCLC that progressed after ≥2 cycles of platinum-doublet chemotherapy (HR 0.54,