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Session H. Lung cancer

H49 Effectiveness of direct egfr mutations research at time of diagnostic biopsy for lung cancer: a single institution outcome research

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Background: The majority of NSCLC are diagnosed at an advanced stage. It is crucial, in the metastatic disease, to obtain sufficient material to carry out molecular testing. EGFR activating mutations and ALK translocation are the most important predictors of clinical response and outcome using specific tyrosine kinasi inhibitors (TKI). In our institution we implemented a virtuous path to accelerate routine EGFR somatic mutation testing and ALK rearrangement testing in order to offer the best first line therapeutic option to the Patients (Pts). Effectiveness of the process was studied in this outcome study focusing on EGFR mutations.

Material and methods: All the Pts presented with advanced lung disease from March 2014 to March 2015 underwent tumor biopsy in the pulmonary division by Broncoscopy or TAC-guided biopsy. At the time of biopsy the pulmonologist obtained patient's consensus for molecular markers testing and sent the request to the pathologist. All diagnosed non-squamous NSCLC were directly tested for EGFR mutations. EGFR mutations of exon 18-21 were detected by Real-Time PCR (Rotorgene) using the therascreen EGFR RGQ PCR Kit, (Qiagen, Germany). Data of the Pts and test results were consecutively introduced in a clinical database. Effectiveness of the process has been established in a rate of test execution >90% and in a median time of attendance for the result less then 2 weeks.

Results: 110 Pts have been included. Diagnosis was adenocarcinoma in 99 pts (90%), NSCLC NOS in 11 Pts (10%). Median age was 67 years. We found 16 patients with EGFR mutation (14,5%); 10 Pts with exon 19 deletion, 4 Pts with exon 21 point mutation (L858R),1 Pt with exon 20 insertions and 1 Pt with exon 18 mutation (G719X). Biopsy material was appropriate for molecular testing for 109 Pts (99%) and median time of reporting was 11 days. Molecular tests were ready for the firt contact with the Oncologist for all the Patients. All mutated Patients received a first line TKI treatment except for the Patient with the exon 20 insertions.

Conclusions: In our institution the introduction of a virtuous path for direct molecular testing in advanced disease has showed high effectiveness in this cohort study that reflects our day by day routine. We strongly support outcome research to optimize clinical pathways of lung cancer Patients.