152P Correlation among different KRAS alterations, genetic co-mutations and PD-L1 expression in patients treated with immunotherapy in metastatic NSCLC

L. Gianoncelli[1], G. Spitaleri[1], A. Passaro[1], C. Fumagalli[2], P. Trillo Aliaga[1], E. Del Signore[1], V. Stati[1], E. Ferraro[1], E. Guerini-Rocco[2], C.M. Catania[1], M. Barberis[2], F. de Marinis[1]

[1]Division of Thoracic Oncology, European Institute of Oncology, Milan, Italy, [2]Division of Pathology & Laboratory Medicine, European Institute of Oncology, Milan, Italy

Background: No molecularly driven strategy against KRAS demonstrated convincing activity in clinical trials. The introduction of immune checkpoints inhibitors (IO) represents a paradigm shift in treatment of NSCLC without gene target. Considering the association with smoke, the high mutational burden, the high PDL1 expression and the abundance of T-cell infiltrating lymphocyte, KRAS mutant tumors have been considered an attractive target for IO.

Methods: Patients (pts) with stage IV NSCLC harboring KRAS mutation treated with IO in our Institution between 2016 and 2018 were retrospectively identified by electronic medical record review. All pts provided written informed consent for the collection of clinical, demographic and molecular data.

Results: A total number of 328 consecutive pts with KRAS mutant NSCLC were identified, of them 32 received IO. All eligible pts had PDL1 testing and in 21 cases (65.6%) NGS was available. Median age was 63 (range 44-78). Male/female were 17/15. Most pts had an adequate ECOG PS (0/1 18.7%/65.6% respectively). 29 pts (90.6%) were smokers. According to the setting, 10 pts were treated in 1st-line, 9 in 2nd-line and 13 in further lines. Between the 9 subtypes of KRAS mutation identified in our cohort, G12C was the commonest (14, 43.8%). 15 pts (46.9%) had PDL1$\geq$50%, 10 (31.2%) had PD-L1 between 1-49%, and 7 (21.9%) were negative. 8 pts (25%) had co-occurring gene mutations. With a median follow-up of 5.1 mos (0.4-28.6), the mPFS and mOS for ITT population were 4.47 (95% CI 2.5-6.4) and 7.73 (95% CI 6-14.5) mos.

Conclusions: Our preliminary results, contrary to findings in other oncogene driven NSCLC, showed that the presence of KRAS mutations seems to be irrelevant for the selection of patients for IO. Furthermore, neither the association of co-mutation (found in the 25% of cases) nor the type of KRAS variant or the treatment setting (1st vs further lines) seems to have an impact on the effectiveness of IO in KRAS NSCLC pts. Data about clinical efficacy according to PD-L1 expression will be presented at the meeting.

Legal entity responsible for the study: The authors.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.