1056P: KRAS and LKB1 mutation conferring prognostic and predictive role on Liquid Biopsy in advanced NSCLC


1. Medical Oncology Department, Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy
2. Breast Medicine Department, University Veneto, Padua, Italy
3. Medical Oncology Department, Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy
4. Medical Oncology Department, Fondazione IRCCS Istituto Nazionale Tumori, Milan, Italy

Corresponding author: A. Prelaci, araula.prelaci@istitutotumori.mi.it

BACKGROUND

Liquid biopsy (LB) is a feasible tool able to detect genomic alterations in cancer at baseline and also as a longitudinal monitoring to identify resistance mutations1. In patients (pts) with mNSCLC, when tissue biopsy remains a difficult procedure, LB might be crucial for therapeutic options, especially in the immunotherapy (IO)2 and target therapy era3. The aim of this bicentric study is to assess the prognostic value of LB in mNSCLC.

METHODS

Data from mNSCLC with any gene alteration/PIK3CA expression were collected at Istituto Nazionale Tumori of Milan and Policlinico Universitario of Naples. Liquid biopsy was performed by 73-gene Guardant360® CDx / 29-gene Archer® LiquidPlex™ panels. Effects of circulating genomic alterations on Overall Survival (OS) (from 4th stage diagnosis to death/last FUP) were assessed using Cox proportional hazard model cell free. Kaplan-Meier curves were performed to assess OS between IO and non-IO treatments arms.

RESULTS

Patients’ characteristics are summarized in Table 1. In 133 (32.1%) cases, LB was performed at IO baseline, while in 101 (24.5%) cases at IO progression. Among the most relevant genes, STK11/LKB1 confers the worst OS (HR 2.12, CI 95% 1.26 – 3.56; \(p = 0.005\), regardless treatments (Fig. 1).

LKB1/KRAS+ have a poorer OS than LKB1/KRAS– (13 m vs 24 m; HR 2.34 – 95% CI 1.19 – 4.61) and LKB1/KRAS+ (13 m vs 34 m; HR 2.99 - 95% CI 1.36-6.54) (Fig. 2).

When analysing the effect of KRAS on IO and non-IO arms, KRAS/IO have the best prognosis compared to KRAS/non-IO which have the worst prognosis, while KRAS/IO seems to have a similar prognosis to KRAS/non-IO pts (HR 0.82; 95% CI 0.43 – 1.58) (Fig. 3).

CONCLUSIONS

Results reported on LB confirmed previous reports on tissue: STK11 pts have the worst prognosis regardless treatments. KRAS/LKB1 compared to STK11/KRAS+ pts and STK11/KRAS+ pts seems to have the best prognosis. IO seems to play a relevant role on survival regardless KRAS status, in fact when using IO the negative prognostic effect of KRAS+ pts decreases and becomes similar to KRAS/non-IO pts.

REFERENCES


CONFLICT OF INTERESTS

Dr M. Brambilla has no COI to declare.