BACKGROUND

- Molecular characterization is mandatory for management of advanced NSCLC, although it is often time-consuming.
- Frequently symptomatic patients have first diagnosis of advanced lung cancer after hospitalization. The outcome of these patients is negatively affected by their performance status, which may worsen while waiting for results of molecular assessment.

METHODS

- For each patient plasma sample was collected at time of diagnosis, for patients with any molecular alterations, plasma sample was collected at time of first revaluation after chemotherapy and at time of disease progression.

RESULTS

OBJECTIVES

- Performance of "up-front" NGS analysis through liquid biopsy of hospitalized patients with newly detected lung cancer compared to conventional diagnostic procedures, also as time consuming.
- Response assessment and longitudinal monitoring through liquid biopsy of patients with oncogenic alterations at baseline.

MOLECULAR ALTERATIONS DURING FIRST LINE TREATMENT AND AT PROGRESSION DISEASE

- MOLECULAR ALTERATIONS AT DIAGNOSIS
  - KRAS Exon 2 Mutation Gly12Asp (VAF 7.0%)
  - EGFR Exon 18 mutation Glu709Lys (VAF 10.2%) and EGFR Exon 19 deletion Leu747 Thr751del (VAF 11.2%)
  - EGFR Exon 21 mutation Leu858Arg (VAF 1.4%)
- MOLECULAR ALTERATIONS AT FIRST LINE TREATMENT
  - Pembrolizumab
  - Osimertinib
  - QEGFR Exon 21 mutation Leu858Arg (VAF 1.4%)
- MOLECULAR ALTERATIONS AT TIME OF PROGRESSION AT FIRST LINE TREATMENT
  - Chemotherapy
  - ERTBB2 Exon 2 mutation Tyr772_Ala775dup (VAF 2.45%)
  - ALK translocation

CONCLUSIONS

Front-line liquid biopsy may improve the management of symptomatic, hospitalized patients with lung cancer, potentially waiting to early start of targeted therapy. Enrollment and longitudinal monitoring of oncogenic drivers with liquid biopsy are ongoing.