**Background**

KRAS G12C lung adenocarcinoma represents a distinct group of patients with different response to immunotherapy.

**Objective**

We aimed to assess clinical, pathological characteristics, and outcomes on immunotherapy for tumors harboring KRAS G12C mutation compared to other KRAS mutations.

**Methods**

Patients with LUADs treated with immunotherapy were prospectively included between January 2017 and July 2020 in our database. Clinicopathological and molecular data were collected and interrogated to evaluate associations between patients’ characteristics, treatment response and survival outcomes.

**Results**

A total of 89 patients where included in the study. KRAS mutations were detected in 24 patients, with KRAS G12C representing 58.3% of all KRAS mutations, followed by KRAS G12A, G12V, G12F and G13C (16.6%, 16.6%, 4.2% and 4.2% respectively). PD-L1<0.5% was present in 50% of patients (n=7) with LUADs harboring KRAS G12C mutation and in 18.2% (n=2) of patients with KRAS non-G12C mutations. Conversely, 16.3% (n=1) of patients harboring KRAS G12C mutation was PD-L1 negative compared to 54.5% (n=6) of patients with KRAS non-G12C mutations, p=0.036.

Overall response rate to immunotherapy was 31.3% for KRAS G12C mutated patients, compared with 18.2% (p=0.65) in other KRAS mutations. The median follow-up of this population was 16.6 months. Survival analysis showed a trend towards a better OS in KRAS G12C tumors compared with tumors harboring KRAS non-G12C mutations (16.3 vs 9.7 months, respectively, p=0.34).

**Conclusions**

LUADs harboring KRAS G12C mutations showed higher PD-L1 expression compared to other KRAS mutations and may benefit more from immunotherapy. Additional biomarkers might be helpful in selecting the best therapy for patients harboring KRAS G12C mutations.

**References**


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The authors declare no conflict of interest regarding this work. Contact: earlola@parcadesalutmar.cat