**Background**

- Currently, there is limited research focusing on the treatment for HER2-altered advanced non-small cell lung cancer (NSCLC) progressed beyond first-line treatment, especially on evaluating the benefit of taxanes in the second or third-line setting.
- The retrospective real-world study aimed to assess the efficacy of various kinds of taxanes, including nab-paclitaxel, paclitaxel, and docetaxel. The research further compared the efficacy of taxanes-based chemotherapy alone (C), and combined with angiogenesis inhibitors (C+A) or immune checkpoint inhibitors (C+I) for HER2-altered NSCLC.

**Methods**

- HER2-altered NSCLC patients who received taxanes-based treatment as the second or third-line setting between November 2015 and September 2021 were screened.
- Patients treated with different kinds of taxanes and various strategies including C, C+I, or C+A were included for final efficacy analysis. Progression-free survival (PFS) was compared between subgroups.

**Results**

- A total of 52 patients were finally included.
- C+I achieved longer PFS than C (median, 5.70 vs 4.27 months, hazard ratio 0.39, 95% CI: 0.16-0.92, p=0.003). There was no difference between C+I and C+A (median, 5.70 vs 4.03 months, hazard ratio 0.92, 95% CI: 0.46-1.85, p=0.87), despite of PD-L1 expression or tumor mutational burden.
- A clinically meaningful improvement in PFS was observed among patients in the nab-paclitaxel group compared with those in the docetaxel group (median, 6.40 vs. 4.03 months, hazard ratio 0.34, 95% CI: 0.16-0.71, p=0.003).

**Limitations**

- It inevitably exists selective bias due to the retrospective nature.
- Less than half of the patients received large panels of NGS testing, with no adequate data for molecular analysis.
- Results should be interpreted with caution due to the limited sample size receiving immunotherapy in this study.

**Conclusions**

- In the taxanes, nab-paclitaxel appears to be a reasonable alternative to docetaxel for HER2-altered patients.
- Chemotherapy plus immune checkpoint inhibitors might yield more survival benefits than chemotherapy alone in the second or third-line setting in HER2-altered NSCLC.

**Acknowledgements**

- We thank all the patients and their families who participated in this study.