e20637 **Publication Only**

Real world outcomes of trilaciclib in ES-SCLC.

Joseph Elijah, Allison Holdsworth, Katy Wang, Kristopher Attwood, Jeffrey Baron, Eugene Przespolewski, Prantesh Jain, Grace K. Dy, Christina Billias; Roswell Park Comprehensive Cancer Center, Buffalo, NY; University at Buffalo School of Pharmacy and Pharmaceutical Sciences, Buffalo, NY

Background: Carboplatin, etoposide, and atezolizumab (PEA) is the most widely used combination for first-line treatment of extensive-stage small cell lung cancer (ES-SCLC). Chemotherapy-induced myelosuppression is a common sequalae that is traditionally managed with lineage-specific supportive care modalities. Studies that evaluated trilaciclib versus placebo in combination with chemotherapy demonstrated statistically significant improvements in the duration of severe neutropenia (SN), defined as ANC < 500 cells/μL, in cycle 1 and incidence of SN as a result of its transient myeloprotective effects. There remains considerable controversy in the adoption of trilaciclib as a supportive medication in clinical practice. The objective of this quality assessment study was to assess utility of trilaciclib in real-world ES-SCLC patients. **Methods:** This was a single center study with quasi-experimental design comparing patients with confirmed ES-SCLC who received trilaciclib + PEA (PEAT) from April 2021 to July 2022 versus those who received PEA without trilaciclib (PEA) from February 2020 to February 2021. Patients with limited-stage SCLC, prior treatment with immunotherapies, carboplatin dose AUC < 3.5 with cycle 1, and active clinical trial enrollment were excluded. The primary endpoint evaluated was incidence of SN after cycle 1 and during treatment period. Additional measures related to myelopreservation and patient outcomes were assessed as secondary endpoints. Demographic data was analyzed using descriptive statistics. Dichotomous and continuous variables were compared by Mann-Whitney U or one-sided Fisher's exact test. Progression-free survival (PFS) and overall survival (OS) were evaluated by Kaplan-Meier (KM) estimate. **Results:** 34 patients received PEAT and 44 patients received PEA. Demographic and baseline clinical characteristics were similar between both cohorts except for older median age of patients (69 years old vs 64 years old) and higher proportion of male patients (65% vs 39%) in the trilaciclib cohort. Even though there was a numerically lower rate of SN (3%) and hospitalization due to febrile neutropenia (FN) or infection (6%) in the PEAT versus the PEA (18%;11%) cohort, statistical significance was not met (p = 0.07; p = 0.065). Likewise, incidence of FN, platelet transfusion requirements, all-cause chemotherapy reductions, and treatment delays were not statistically different. However, the PEAT cohort as compared to PEA experienced a statistically significant reduction in red blood cell transfusion requirements (3% vs 23%; p = 0.02) and grade 3-4 anemia (6% vs 25%; p = 0.03). PFS and OS between the two cohorts were not statistically different. **Conclusions:** Based on this single center retrospective study, use of trilaciclib appears to confer improvement in the safety profile of PEA without negatively impacting survival outcomes. Therefore, results of this study support the integration of trilaciclib with PEA for ES-SCLC. Research Sponsor: None.