Title: Real-World Time Toxicity of Tarlatamab in Extensive-Stage Small Cell Lung Cancer (ES-SCLC)

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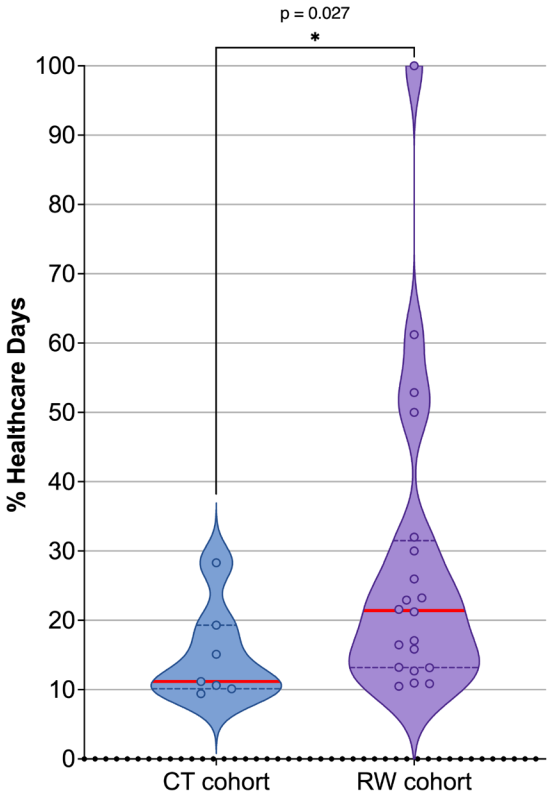
Background: Although tarlatamab has transformed treatment for ES-SCLC, its distinct toxicity profile, including Cytokine-Release Syndrome (CRS) and neurotoxicity, requires close and frequent patient monitoring. Clinical trials (CT) enroll patients with fewer comorbidities and robust performance status, which may underestimate time toxicity—the days spent in healthcare contact—in a more frail real-world (RW) population. We hypothesize that RW patients experience higher time toxicity, including more emergency room and clinic visits, and hospitalizations for toxicity management, than CT participants.

Methods: A single-center retrospective analysis of adults with ES-SCLC treated with tarlatamab at The Ohio State University from 1/1/2017 to 8/1/2024 was performed. Patients were stratified into CT and RW cohorts. Healthcare Days were defined as days involving any healthcare contact (inpatient or outpatient); Home Days were defined as days alive on treatment without any healthcare contact. We compared demographics, safety, and time burdens between cohorts.

Results: 27 patients (7 CT and 20 RW) were included (median age 63; 59% male, 89% White) in this analysis. The trial mandated longer inpatient monitoring; therefore, the median inpatient observation times were longer in the CT than the RW cohort (CT: 74h and 71h after C1D1 and C1D8 treatments vs RW: 49h and 29h after C1D1 and C1D8 treatments). CRS occurred in 59% and 26% of patients after C1D1 and C1D8, while neurotoxicity occurred in 15% and 0%. Most toxicities were grade 1 or 2, with only one patient experiencing grade 3 toxicity. Supportive measures managed most cases; however, tocilizumab and anakinra were needed in 3 and 1 RW patients, respectively. CT patients remained on therapy for a median of 197 days (IQR: 81.5–287.5) with only 14.8% of that time spent as Healthcare Days. In contrast, RW patients had a median time on treatment of only 80.5 days (IQR: 50.5–115.5) and spent 28% of that time as Healthcare Days. Consequently, the RW cohort experienced a statistically significant reduction in Home Days compared to trial participants (72% vs 85.2%; p=0.027) (Figure 1).

Conclusions: RW patients had a significantly shorter time on treatment and twice as many Healthcare Days compared to trial participants, reflecting the higher disease burden, comorbidities, and lower performance status typical of RW populations. RW patients face an early upfront time investment with minimal increase in Home Days. These findings highlight the need for careful patient selection and improved outpatient monitoring to optimize time-toxicity of tarlatamab, particularly for vulnerable populations.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% Healthcare Days
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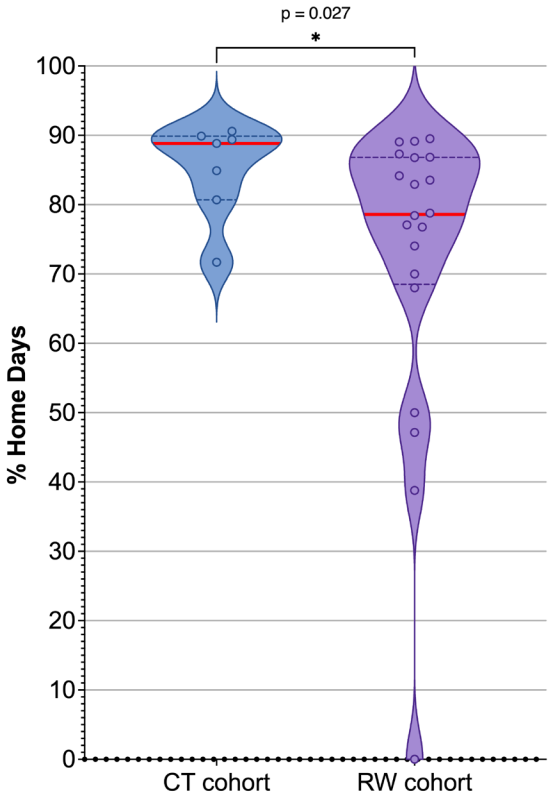
RW cohort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