EFFICACY AND TOXICITY OF SINGLE AGENT IMMUNE CHECKPOINT INHIBITORS AMONG ADULTS WITH CANCER AGED ≥ 80 YEARS: A MULTICENTER INTERNATIONAL COHORT STUDY

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Background Immune checkpoint inhibitors (ICIs) are approved by the U.S. Food&Drug Administration in over 17 tumor types. Older adult patients make up about a quarter of all cancer patients but are historically understudied in cancer clinical trials. ICIs are associated with immune-related adverse events (irAEs), which may be particularly morbid for older adult patients with underlying comorbidities and impaired functional status. In this study, we provide insight into the real-world safety and efficacy of ICIs among older adult patients (≥ 80 years) with cancer.

Methods This is a multicenter, international retrospective study of tumor-agnostic older adult patients with cancer treated with single-agent ICIs between 2010–2019 from 18 academic centers in the U.S. and Europe. A cohort of 928 patients aged ≥ 80 years during treatment with ICI was assembled and analyzed to evaluate clinical outcomes and irAE patterns in older adult patients treated with single-agent ICIs.

Results Median age at ICI initiation was 83.0 years (range 75.8–97.0). Most patients (86.9%) were treated with anti-PD-1 therapy. Among the full cohort, the three most common tumors were non-small cell lung cancer (NSCLC, 37.2%, n=345), melanoma (35.5%, n=329), and genitourinary (GU) tumors (16.5%, n=153). Objective response rates for patients with NSCLC, melanoma, and GU tumors were 32.2%, 39.3%, and 26.2%, respectively. Median progression-free survival (PFS) was 6.7 months (95%CI, 5.2–8.6) for patients with NSCLC, 11.1 months (95%CI, 8.9–16.0) for patients with melanoma, and 6.0 months (95% CI, 5.0–10.7) for patients with GU malignancy. Median overall survival (OS) was 10.9 months (95%CI, 8.6–13.1) for patients with NSCLC, 30.0 months (95%CI, 23.6–46.4) for patients with melanoma, and 15.0 months (95%CI 9.1–25.4) for GU patients (Figure 1A-C). Within histology-specific cohorts (NSCLC, melanoma and GU), clinical outcomes were similar across age subgroups (<85, 85–89, ≥ 90). Among all patients (N=928), 41.3% experienced ≥ 1 irAE(s), including 12.2% reported to be grade (G)3–4. No irAE-related deaths occurred. The median time to irAE onset was 9.8 weeks; 57% occurred

within the first 3 months after ICI initiation. ICI was discontinued due to irAEs in 16.1% patients. There was no significant difference in the rate of irAEs among patients age <85, 85–89, and ≥ 90 years (p=0.15). Despite similar rates of G3+ irAEs, ICIs were discontinued due to irAE more than twice as often among patients ≥ 90 years compared to patients <90 years (30.9% vs. 15.1%, p=0.008) (table 1).

Conclusions ICIs are effective and generally well-tolerated among older patients with cancer. However, ICI discontinuation due to irAE is more frequent with increasing age.

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