End of life resource utilization among patients receiving immunotherapy for advanced cancer

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Background: Patients (pts) with advanced cancer have high rates of healthcare resource utilization at the end of life (EOL). Immunotherapy (IO) has changed the treatment landscape for many patients with cancer. The impact of IO on resource utilization at the EOL for pts with metastatic disease, including emergency department (ED) visits, hospitalizations, and referrals to hospice is unknown.

Methods: We conducted a single center, retrospective analysis of pts treated with PD-1/L1 or CTLA-4 antibodies alone or in combination from 2011 – 2017. We identified 1,113 pts from electronic health records and present here clinical information for 306 pts with metastatic disease and end of life outcome data for 188 decedents. Survival curves were compared using log-rank test for pts by disease, treatment type, ECOG performance status (PS) at treatment start, and age. Hospice referral rate was compared using Fisher’s exact test.

Results: Of the 306 pts, 131 (43%) had melanoma, 42 (14%) had renal cell carcinoma, 33 (11%) had non-small cell lung cancer, 22 (7%) had head and neck carcinoma, and 78 (25%) had another advanced malignancy. Treatment consisted of nivolumab in 130 (42%) pts, ipilimumab in 73 (24%), pembrolizumab in 59 (19%), nivolumab/ipilimumab in 23 (8%), atezolizumab in 9 (3%), and other IO combinations in 12 (4%). Of the 188 (61%) pts who died, 93 (49%) had at least one ED visit in the last month of life, 110 (59%) had at least one hospitalization, and 21 (11%) died in the hospital. Of all pts who died, 156 (83%) had hospice referral with a median of 11 days (range 1-420) between hospice referral and death. Overall survival (OS) was not associated with disease type (p = 0.11) or treatment (p = 0.832), but was associated with ECOG PS (p = 0.013). Referral to hospice did not vary by disease type (p = 0.945), treatment type, (p = 0.809) or age (p = 0.432), but did vary by ECOG PS (p = 0.006). Death within 72 hours of hospice referral rate varied significantly by inpatient or outpatient referral (p = 0.002).

Conclusions: Hospitalizations and ED visits are frequent at the EOL among pts who received IO for advanced malignancies. There was a high referral rate to hospice, but the median time between hospice referral and death was short. Interventions to decrease aggressive EOL care are needed.

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