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Current Landscape of Immuno-Oncology in Advanced Melanoma

Epidemiology of Advanced Melanoma

Melanoma is the most lethal type of skin cancer.[1] In 2017, approximately 87,110 new cases of melanoma will be diagnosed and approximately 9730 deaths will occur due to the disease.[2] Compared with individuals younger than 50 years, individuals 50 years and older consistently experience higher rates of melanoma. Incidence in this age group increased up to 3% each year from 2003 to 2014.[2] Melanoma is more likely to spread than other skin cancers and, if caught after metastasis, is difficult to treat.[1,2] The 5-year survival rate for patients with metastatic melanoma is 18%.[2]

Economic Burden of Advanced Melanoma

The financial burden of treating metastatic melanoma weighs heavily on patients and the healthcare system, and with each progressive stage of melanoma, treatment costs increase.[1,3] Recently, a retrospective, longitudinal, open-cohort study in patients with metastatic melanoma (N = 834) measured the total all-cause per-patient-per-month (PPPM) direct healthcare costs and utilization for traditional and newer therapies.[1] Study treatments included ipilimumab (n = 265), vemurafenib (n = 234), interleukin-2 (IL-2; n = 104), dacarbazine monotherapy (n = 24), dacarbazine combination therapy (n = 22), paclitaxel monotherapy (n = 44), paclitaxel combination therapy (n = 130), and temozolomide (n = 11).[1] Average PPPM costs for the ipilimumab cohort were the highest at $35,472, followed by IL-2 ($34,850) and vemurafenib ($17,793). Temozolomide was the least costly ($10,879).[1]

Newer therapies in this study were more expensive. Ipilimumab and vemurafenib, approved in 2011, were the primary therapies for 60% of patients, and although the adjusted PPPM total costs were $18,337 higher with ipilimumab, this was mainly due to the expense of its administration in the outpatient setting. There were no significant differences observed in resource utilization (hospitalizations and emergency department visits) between ipilimumab and vemurafenib.[1]

Considerable toxicity associated with current treatments for metastatic melanoma may lead to higher healthcare resource utilization and related expenditures. A study reviewing the cost of managing grade 3 or 4 treatment-related adverse events (AEs) reported with FDA-approved or National Comprehensive Cancer Network–recommended monotherapies in patients with metastatic melanoma (N = 2998) found that serious AEs led to costly inpatient and outpatient procedures. The agents reviewed were dabrafenib, dacarbazine, IL-2, ipilimumab, temozolomide, trametinib, vemurafenib, and talimogene laherparepvec (T-VEC).[4] Investigators performed a literature search to determine the most common grade 3 or 4 AEs with each drug, then interviewed oncologists specializing in melanoma to assess their treatment approaches for these AEs.[4]

In the outpatient setting, the most expensive treatment-related AEs were neutropenia, headache, peripheral neuropathy, cutaneous squamous cell carcinoma, and dyspnea. Treatment for neutropenia was the most »

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