[Mock abstract for the University of California, San Diego, Medical Writing Certificate]

Abstract

Budget Impact of Avelumab

Objective: Merkel cell carcinoma (MCC) is a rare, aggressive cutaneous neuroendocrine malignancy with an incidence rate of 0.7 cases per 100,000 person-years in the United States. Risk factors are male gender, advanced age, fair skin, and ultraviolet light exposure. The increase in cases of MCC over the past two decades correlates with the aging U.S. population. It is estimated there will be up to 3,284 cases of MCC per year by 2025. Metastases occur early (30% within 1-3 years of diagnosis) and respond poorly to traditional chemotherapy. The treatment of elderly patients diagnosed with metastatic disease is limited due to toxicity associated with traditional chemotherapy regimens. Immune therapy alternatives, such as avelumab, have less toxicity and may prolong the survival of patients with metastatic MCC (mMCC). In this budget impact model (BIM), we assess the payer costs associated with adding avelumab to treat patients with mMCC in a 30-million-member commercial health plan.

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Methods: This BIM extended over a 3-year period (2019-2012) and examined two scenarios. The "current" scenario assessed alternative immune-oncology (IO) agents (pembrolizumab and nivolumab) and chemotherapies traditionally used to treat mMCC (topotecan; carboplatin and etoposide; cyclophosphamide, doxorubicin, and vincristine). The "revised" scenario added avelumab to the formulary and switched 65% of patients who received either pembrolizumab or nivolumab to avelumab. The primary outcome was the budget impact of adding avelumab to the formulary including total costs and costs per member per month (PMPM).

Results: In this theoretical 30-million-member health plan, 97 patients were eligible for treatment with avelumab. In the "current" scenario (avelumab is not on formulary) the total cost for treating patients with MCC was $11,710,115. In the "revised" scenario (avelumab is on formulary), the addition of avelumab demonstrated a cost savings of $2,643,173. The incremental cost PMPM was -$0.00212 in year one, -$0.00260 in year two, and -$0.00262 in year three.

Limitations: Costs associated with the extended survival of patients who received IO agents in the "revised" scenario were not considered in the final analysis.

Conclusion: This investigation suggests that, from a payer perspective, the addition of avelumab to the formulary has a minimal impact on cost PMPM in a 30-million-member U.S. health plan.