10-2021

Cost-Effectiveness Analysis of Recombinant Zoster Vaccine for the Prevention of Herpes Zoster in Immunocompromised Adults Diagnosed with Select Cancers in the United States

Desmond Curran

Brandon Patterson

Justin Carrico

Ahmed Salem

Elizabeth La

See next page for additional authors

Recommended Citation

Curran D, Patterson B, Carrico J, Salem A, La E, Lorenc S, Hicks K, Poston S, Carpenter C. Cost-Effectiveness Analysis of Recombinant Zoster Vaccine for the Prevention of Herpes Zoster in Immunocompromised Adults Diagnosed with Select Cancers in the United States. American Journal of Hematology. 2021 Oct 1 ; 96(S1):S26.

Authors

Desmond Curran, Brandon Patterson, Justin Carrico, Ahmed Salem, Elizabeth La, Stephane Lorenc, Katherine Hicks, Sara Poston, and Christopher Carpenter

positive FOBT, and again edema in the right facial region. EBV reactivation was suspected, for which a viral load was requested with a report of 1 353.25 copies/ml. We administrated a second dose of rituximab, however, the patient persisted with gastrointestinal bleeding, which led to hypovolemic shock and death.**Conclusion(s):** PTLD have an OS of 40-60% (5years), due to the fact that patients die because of disease progression and infectious complications. This case reflects the complexity of following a treatment schedule, especially when infectious complications overlap with the application of rituximab, which allowed EBV replication, with consequent disease progression.

References

1. Dierickx D, Tousseyn T, Gheysens O: How I treat post transplant lymphoproliferative disorders. Blood 126: 2274-2283, 2015.

2. Kirtane T, Guneesh U, Angad U, et al: Posttransplant Lymphoproliferative Disorder involving the Gastrointestinal Tract. Journal of Digestive Endoscopy 11: 293-294, 2020.

3. Gupta D, Mendoca S, Chakraborty S: Post transplant Lymphoproliferative disorder. Indian J hematol Blodd Transfus 36: 229-237, 2020.

PO-31 | Cost-Effectiveness Analysis of Recombinant Zoster Vaccine for the Prevention of Herpes Zoster in Immunocompromised Adults Diagnosed with Select Cancers in the United States

Desmond Curran[1], Brandon Patterson[2], Justin Carrico[3], Ahmed Salem[4], Elizabeth La[5], Stéphane Lorenc[6], katherine Hicks[7], Sara Poston[8], Christopher Carpenter[9]

[1]GSK, Wavre, Belgium, [2]Former GSK, currently Janssen Global Services, Raritan, United States, [3]RTI Health Solutions, Research Triangle Park, United States, [4]GSK Vaccines, Wavre, Belgium, [5]GSK, Research Triangle Park, United States, [6]Freelance Consultant, Wavre, Belgium, [7]RTI HS, Research Triangle Park, United States, [8]GSK, Philadelphia, United States, [9]William Beaumont Hospital, Royal Oak, United States

Introduction / Background / Significance: Immunocompromised (IC) populations diagnosed with cancer are at increased risk for herpes zoster (HZ) due to their underlying disease and/or therapy. This risk is highest among individuals receiving hematopoietic stem cell transplant (HSCT) to treat multiple myeloma, lymphomas, or other diseases. HZ is characterized by a painful vesicular rash. IC populations with HZ are also at increased risk of developing HZ-related complications such as postherpetic neuralgia, a persistent pain that can last for months or years. This study evaluates the cost-effectiveness of recombinant zoster vaccine (RZV) versus no vaccine for the prevention of HZ in IC adult HSCT recipients, patients with Hodgkin lymphoma, and patients with breast cancer in the United States (US).

Materials and Methods / Case Presentation / Objective: A Markov model was developed to simulate a hypothetical cohort of 1 million IC adults over a 30-year period. The model uses a one-year cycle length and estimates avoided HZ cases and complications, discounted quality-adjusted life-years (QALYs) gained, and discounted costs, comparing scenarios where individuals are vaccinated with RZV versus no HZ vaccine. The base-case analysis modeled HSCT recipients, with scenario analyses included for patients with either Hodgkin lymphoma or breast cancer. To represent younger populations, the model followed 35-year-old HSCT recipients who were assumed to remain IC for five years. Patients with Hodgkin lymphoma or breast cancer were aged 25 and 45 years, respectively, and remained IC for two years. The model assumed 100% compliance with the two-dose RZV series. RZV efficacy and waning inputs were derived from phase 3 clinical trial data. Other input values for epidemiological, cost, utility, and mortality parameters were obtained from the published literature, national survey data, Red Book, and US life tables. A number of input values, including HZ incidence, varied depending on whether individuals were IC or had returned to healthy status. Robustness of the results was assessed by sensitivity and scenario analyses.

Results / Description / Main Outcome Measure(s): For the base-case 1 million hypothetical HSCT recipients, RZV vaccination resulted in 116,790 avoided HZ cases, 5,545 QALYs gained, and a societal cost-savings of $5.4 million compared with no vaccine. In scenario analyses, RZV vaccination resulted in 100,104 avoided HZ cases and 2,098 QALYs gained for patients with Hodgkin lymphoma and 136,399 avoided HZ cases and 1,813 QALYs gained for patients with breast cancer. From the societal perspective, incremental cost-effectiveness ratios (ICERs) for RZV vaccination were $95,972/QALY gained for Hodgkin lymphoma and $67,682 for breast cancer. For the HSCT population, ~97% of simulations from the probabilistic sensitivity analysis demonstrated ICERs less than $100,000/QALY gained.

Conclusion(s): Although the risk and burden of HZ are increased in individuals diagnosed with cancer over a relatively short period, results from this study highlight the value of RZV in preventing HZ cases and improving the quality of life in the studied IC populations. Results further indicate that vaccination with RZV is a cost-effective option for the prevention of HZ and its associated complications in these IC populations in the US. Funding: GSK (study: HO-19-19750/VxHO-000054); Acknowledgment: Seri Anderson; Business & Decision Life Sciences platform c/o GSK (Coordination: Carole Desiron).

PO-32 | Depletion of Large Granular Lymphocytes in A First-in-Human Clinical Trial of ABC008

Steven Greenberg[1], Dulce Soler-Ferran[2], Monette Coutreau[2], Kate Courtemanche[2], Jorge Escobar[2], Merrilee Needham[3], Niti Goel[2]

[1]Brigham and Women's Hospital, Boston, United States, [2]Abcuro, Inc, Newton, United States, [3]Perron Institute, Perth, Australia

Background: Large granular lymphocytes (LGLs), comprising highly differentiated CD8+ cytotoxic T (Tc) cells, are expanded and pathogenic in T cell large granular lymphocytic leukemia (T-LGLL). Killer cell lectin-like receptor G1 (KLRG1) is a surface receptor that marks these highly differentiated Tc cells. ABC008, a humanized afucosylated anti-KLRG1 monoclonal antibody, potently depletes KLRG1+ T cells in vitro and in cynomolgus monkeys. ABC008 is under development