EE473

Cost-Efficiency Modeling of Conversion to Rituximab-pvvr in Diffuse Large B-Cell Lymphoma in Medicare

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Objective

To use cost-efficiency analysis to explore the potential cost-savings and budget-neutral expanded access of shifting treatment from rituximab originator product to biosimilars in Medicare patients with diffuse large B-cell lymphoma.

Conclusion

Use of rituximab-pvvr rather than originator rituximab, in combination with R-CHOP, can result in substantial cost savings in first-line treatment of patients with diffuse large B-cell lymphoma in Medicare.

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Background

- Originator rituximab (Rituxan®) is a monoclonal antibody approved for the treatment of Diffuse Large B-Cell Lymphoma
- In 2019, rituximab-pvvr (Ruxience®) received FDA approval and entered the U.S. market [1]. Two additional rituximab biosimilars are also available in the U.S. market: rituximab-abbs (Truxima®) and rituximab-arrx (Riabni®).
- Cost-efficiency analysis is a methodology that analyzes the level of savings that can be realized by shifting treatment between alternative therapies and how many additional patients can be treated with the resulting savings.[2]
- This study uses cost-efficiency analysis to explore the potential cost-savings and budget-neutral expanded access that can be realized by shifting treatment from originator rituximab to biosimilar rituximab in Medicare.

Methods

- We developed a Microsoft Excel®–based simulation model to evaluate the cost-efficiency of the conversion from originator rituximab treatment to treatment with rituximab biosimilars among patients with DLBCL in Medicare.
- The target patient population receiving annual first-line systemic therapy for DLBCL treatment in Medicare (n=1,641) was calculated using Medicare enrollment data and SEER incidence rates in patients aged 65 and older.[3]
- It is assumed that 89.8% of new diagnoses would be eligible to receive rituximab-based treatment (n=1,473).[4]
- Comparators to originator rituximab included rituximab-pvvr, -abbs, and -arrx.
- Drug dosage information was obtained from R-CHOP (cyclophosphamide, doxorubicin, vincristine, and prednisone) treatment protocols for DLBCL.[5]
- Drug acquisition cost inputs were based on average sales price (ASP) from Q2, 2024.[6]
- Following CMS methods, we modeled ASP mark up of 6% for originator rituximab and 8% for rituximab biosimilars.[7]
- Outcomes included per-patient per-month (PPPM) cost-savings (vs. originator), total monthly savings in the cohort, and number needed to convert (NNC) to biosimilar to fund treatment of an additional 100 patients.
- NNC and total expenditure savings were evaluated in 50% and 100% biosimilar conversion scenarios.

Results

- In 50% (n=737) and 100% (n=1,473) conversion scenarios focused on conversion to rituximab-pvvr, mean per patient per month (PPPM) savings were $2,921 and $5,842 respectively. (**Table 1**)
- In 50% and 100% conversion scenarios are focused on conversion to rituximab-pvvr, full cohort monthly savings were $4,303,426 and $8,606,852 respectively.
- These biosimilar-associated savings are 33% and 66% reductions in cost vs. originator-based treatment, respectively.
- Rituximab-pvvr savings exceed savings from conversion to alternative biosimilars rituximab-abbs or -arrx. **(Figure 1**)
- At 100% conversion, monthly savings from biosimilar conversion could fund up to 2,900 additional patient-months of treatment with rituximab-pvvr-based R-CHOP.
- The NNC was 51 to treat an additional 100 patients with rituximab-pvvr-based R-CHOP and ranged from 120 to 136 with alternative rituximab biosimilars. (**Figure 1**)

Outcome	Conversion to Biosimilar None	50%	100%
# Using Originator Rituximab Monthly	1,473	737	0
# Using Rituximab-pvvr Monthly	0	737	1,473
Originator Rituximab PPPM Cost	$8,810	$8,810	NA
Rituximab-pvvr PPPM Cost	NA	$2,968	$2,968
Total Mean PPPM Cost	$8,810	$5,889	$2,968
PPPM Savings vs. No Conversion Scenario	Reference	$2,921	$5,842

Table 1. Total cost-savings with conversion to rituximab-pvvr

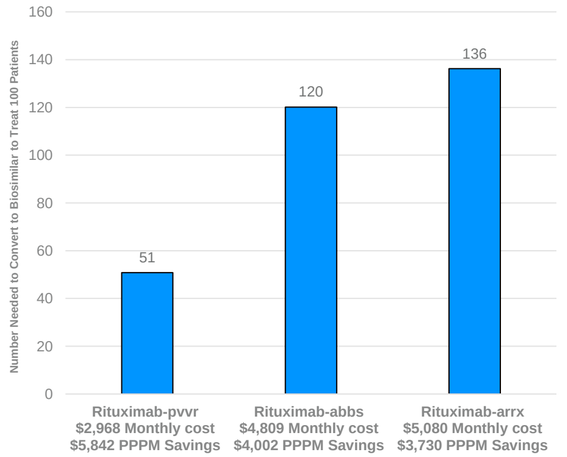

Figure 1: Cost-efficiency results for rituximab biosimilars vs. originator rituximab

Discussion

- In the first cost-efficiency analysis of rituximab biosimilars in DLBCL, we demonstrate that rituximab-pvvr-based R-CHOP can result in substantial cost-savings vs. originator-based R-CHOP first-line treatment of patients with DLBCL in Medicare.
- These cost savings could be reinvested to treat a substantial number of additional patients with DLBCL, or fund other costs of care in Medicare, on a budget-neutral basis.
- The strengths of this study include:
  - Assessment of potential savings with all rituximab biosimilars available at the time of the analysis
  - Evaluation of NNC outcome that is aligned with the decision-making needs of physicians, system administrators, payers, and other stakeholders
- The limitations of this study include:
  - Real-world cost-savings could be reduced and NNC could increase if current biosimilar uptake is higher than the scenarios modeled in this study
  - Our estimate of the monthly number of patients treated with rituximab is based on CMS enrollment and SEER DLBCL incidence data and could vary from observed use in Medicare in a given month
  - We focus on treatment cost outcomes as the major differentiator between biosimilars, but other outcomes could be considered too.
- Future research should reassess cost-efficiency if ASP changes substantially or if new biosimilars enter the market.