Evaluation of Cost Savings, Safety and Barriers to Implementing a Biosimilar Interchange Policy in a Community Infusion Center

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Background

Biologics are a common class of medications used in oncology often associated with high costs and limited patient access. Biosimilars are biological products that are “highly similar” in molecular structure to the reference drug product, notwithstanding minor differences in clinically inactive components as established by FDA approval. There are currently no FDA approved interchangeable biosimilars.

Objective

To assess potential cost savings, safety, and barriers associated with the use of biosimilars compared to the originator products for trastuzumab, bevacizumab and rituximab.

Methods

- A single-center retrospective study with prospective continuation post biosimilar interchange policy
- The retrospective study included 112 adult patients (> 18 years old) who received at least one dose of trastuzumab, bevacizumab, or rituximab at a community outpatient infusion center between September 1, 2019 and September 1, 2020
- The prospective study is currently ongoing to include adult patients (> 18 years old) who receive at least one dose of trastuzumab, bevacizumab, rituximab, bevacizumab-awwb, rituximab-abbs, trastuzumab-anns, or trastuzumab-dkst between October 5, 2020 and April 31, 2021
- Data collected includes patient’s age, gender, insurance, diagnosis, chemotherapy, dose, administered pre-medications, cost of dose given, prescribing physician, infusion rate, infusion-related reactions, ejection fraction trend (for trastuzumab, trastuzumab-anns, or trastuzumab-dkst), blood pressure and urine protein (for bevacizumab and bevacizumab-awwb)
- For the prospective study, barriers to switching patients to biosimilars will be investigated

Results

Retrospective Study - Baseline Demographics

Demographics	Trastuzumab (N = 26)	Bevacizumab (N = 40)	Rituximab (N = 46)
Female (%)	25 (96.2)	22 (55)	19 (41)
Medicare (%)	9 (34.6)	14 (35)	30 (65.2)
Medicaid (%)	1 (3.8)	4 (10)	2 (4.3)
Commercial Insurance (%)	15 (57.7)	18 (45)	11 (23.9)
VA (%)	1 (3.8)	2 (5)	3 (6.5)
Self Pay (%)	0 (0)	2 (5)	0 (0)

Retrospective Study - Total Annual Cost

	Total number of doses	Average dose (mg)	Average cost per dose ($)	Total spending for all doses ($)
Trastuzumab (N = 26)	236	378	3,930	927,533
Bevacizumab (N = 40)	273	504	4,033	1,101,040
Rituximab (N = 46)	187	690	6,485	1,212,647

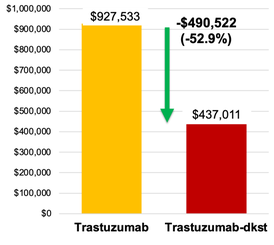
Prospective Study - Preliminary Cost Savings (October 5, 2020 to November 12, 2020)

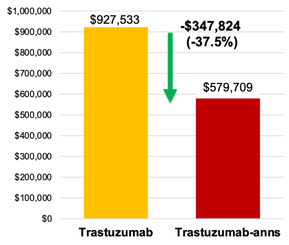
	Total number of doses	Average dose (mg)	Average cost per dose ($)	Total spending for all doses ($)	Total savings ($)
Trastuzumab-dkst (N = 8)	14	504	2,471	34,594	38,830
Trastuzumab-anns (N = 4)	8	533	3,461	27,690	16,614
Bevacizumab-awwb (N = 10)	21	524	2,829	59,400	28,600
Rituximab-abbs (N = 10)	12	658	3,620	43,450	74,260

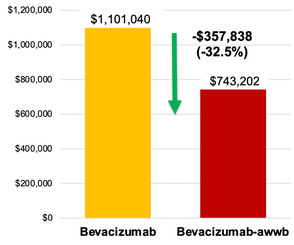
Additional Results - Infusion-related Reactions

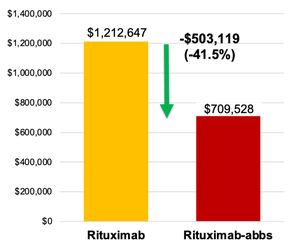
Retrospective	Rituximab (5)
Prospective	None

Projected Annual Cost-Savings Associated with Switching to Biosimilars









Conclusions

- Average annual cost for using brand trastuzumab bevacizumab, and rituximab is $927,533, $1,101,040 and $1,212,647, respectively
- Comparing the cost of the total doses (in mg) administered in the 1-year study period between the originator products and the biosimilars, the projected cost savings from utilizing trastuzumab-anns, trastuzumab-dkst, bevacizumab-awwb, and rituximab-abbs are $490,522; $347,324; $357,838; and $503,119, annually at our infusion center
- Rates of infusion-related reactions in the study’s population were low and there have been none reported with biosimilar use to date
- Barriers to switching include payor source (insurance) preference of biosimilar and use of commercial insurance which requires prior authorization (PA)

Limitations

- Single-centered
- Annual usage variability for the biologics studied

Next Steps

- Proceed with the prospective study to assess long-term cost savings, safety and barriers associated with the implementation of the biosimilar interchange policy
- Continue to evaluate infusion related adverse reactions

References

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Disclosure

Authors have nothing to disclose concerning possible financial or personal relationships with commercial entities