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

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. The objective of this study is 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: This is a single-center two-part retrospective and prospective study approved by the Institutional Review Board (IRB). The retrospective study included Southeast Cancer Center patients 18 years and older receiving trastuzumab, bevacizumab and rituximab between September 1, 2019 and September 1, 2020. Patients were excluded if they had a documented administration of bevacizumab-awwb, rituximab-abbs, trastuzumab-anns, or trastuzumab-dkst. The ongoing prospective study includes patients 18 years and older receiving infusions of bevacizumab-awwb, rituximab-abbs, trastuzumab-anns, trastuzumab-dkst or the originator products from October 5, 2020 to April 31, 2021. Patients with documented biosimilar reactions prior to policy implementation and prior to admission to Southeast will be excluded.

Data collection from the electronic medical record (EMR) including barriers to implementing the biosimilar interchange policy is still ongoing. Infusion-related reactions documented in the EMR and medication event reporting system are still being reviewed to assess safety. Measures of central tendency were utilized for projected cost savings using the retrospective data. Full presentation of prospective data will be used to evaluate the cost savings, safety and barriers to biosimilar use.

Results: In the one-year time period of the retrospective study, 28 patients received a total of 236 doses of trastuzumab, 40 patients received a total of 273 doses of bevacizumab and 48 patients received a total of 187 doses of rituximab. The most common primary source of health insurance utilized by patients in the trastuzumab and bevacizumab was commercial insurance (57.7% in trastuzumab and 45% in bevacizumab). For rituximab, Medicare (65.2%) was the most common source of primary health insurance. During the retrospective study, a total of 5 infusion related adverse reactions solely in the rituximab group were reported. Thus far, data from October 5, 2020 to November 15, 2020 has been collected for the prospective portion of the study. In the one-month period, 8 patients received a total of 14 doses of trastuzumab-dkst, 4 patients received 8 doses of trastuzumab-anns, 10 patients received 21 doses of bevacizumab-awwb and 10 patients received 12 doses of rituximab-abbs. The total spending of those doses for trastuzumab-anns, trastuzumab-dkst, bevacizumab-awwb and rituximab-abbs were $34,594, $27,690, $59,400 and $43,450, respectively. Cost analysis data as projected from the retrospective study equated to a total savings of $38,830, $16,614, $28,600 and $74,260, respectively, when utilizing the biosimilar products. There has been no infusion related adverse reactions reported to date in the biosimilar patient population.

Conclusion: Switching to trastuzumab-dkst, trastuzumab-anns, bevacizumab-awwb, and rituximab-abbs is projected to reduce annual expenditure when compared to using the originator products by 52.9%, 37.5%, 32.5%, and 41.5% at this infusion center. Barriers to switching to biosimilars includes payor source (insurance preference) of biosimilar and use of commercial insurance which requires prior authorization. Our findings show that the implemented proactive policy assisted in increasing the availability of biosimilars to reduce overall costs for patients and the institution.