



COST SAVINGS AS A RESULT OF BIOSIMILARS ADOPTION IN ONE OF THE TERTIARY GOVERNMENTAL HOSPITALS IN RIYADH, SAUDI ARABIA

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BACKGROUND

- Biosimilar medications are medications that are “highly similar” to the original biological counterparts and are considered a more affordable and cheaper alternatives¹.
- For Controlled Budget Environments (CBE) like governmental hospitals, providing patient access to highly specified products and targeted therapies, while maintaining a good budget to cover for all the other responsibilities and commitments are one of the most difficult challenges that decision makers and the budget holders encounter.
- The logic for any regulatory authority to approve biosimilar products is to allow for a better price competition between manufacturers, which will allow the procurement of targeted and specified therapies in a more affordable prices².
- The savings generated from the biosimilars adoption could potentially be used to buy more units of the biological product and give access to more patients.³

OBJECTIVES

- To analyze the utilizations of the biological products in one of the tertiary governmental hospitals in Riyadh, Saudi Arabia.
- To calculate the amount of savings that would’ve resulted from the adoption and inclusion of the biosimilar products.

METHODS

- Data related to the utilization of the original biological products were retrieved from the pharmacy dispensing system, using code identifiers for the biological product and the related dosage from to link it the respective dispensing area.
- The cost for the original biological products were the tendering prices for the products that were awarded during the respective tender for the year 2020.
- Biosimilar drug prices (highest and lowest) were gathered from the tendering prices (if the product was listed in the tender) or the anticipated range published in the literature (10-30% lower than the original biological price).
- The range of number of extra units were calculated by dividing the amounts of savings by the range or prices of the biosimilar products (highest and lowest).
- Results were presented in a tabular format; Microsoft Excel 2022) was used to calculate the results.
- The prices and costs were calculated in Saudi Riyals (SAR) and converted to US Dollars (3.75 Exchange rate for the year 2020).

Table 1: Total Savings for All Areas

Savings	Lowest Biosimilar Price	Highest Biosimilar Price	Number of Units (Lowest Price)	Number of Units (Highest Price)
IV	164,910.62	54,514.37	1,233.57	318.33
IPP	62,313.85	20,554.59	4,277.00	1,093.00
OPP	2,589,039.37	863,013.12	24,674.83	6,397.33
Total Savings	2,816,263.84	938,082.08	30,185.40	7,808.67

Ligand: IV: Intravenous Room; IPP: In-Patient Pharmacy; OPP: Out-Patient Pharmacy

Table 2: Intravenous (IV) Room Savings Based on Year 2020 Biologics Utilization

Drug Name	Total Cost after Biosimilar (lowest)	Savings (Lowest Price)	Number of Extra Units (Lowest Price)	Total Cost after Biosimilar (Highest)	Savings (Highest Price)	Number of Extra Units (Highest Price)
Filgrastim Injection 300MCG	63,672.00	27,288.00	649.71	81,864.00	9,096.00	168.44
inFLIXimab Recombinant 100mg Injection	123,732.00	52,668.00	209	159,084.00	17,316.00	53.44
riTUXimab 100mg/10mL Injection	198,982.90	84,954.62	374.86	255,835.15	28,102.37	96.44
Total		164,910.62			54,514.37	318.33

Table 3: In-Patient Pharmacy (IPP) Savings Based on Year 2020 Biologics Utilization

Drug Name	Total Cost after Biosimilar (lowest)	Savings (Lowest Price)	Number of Extra Units (Lowest Price)	Total Cost after Biosimilar (Highest)	Savings (Highest Price)	Number of Extra Units (Highest Price)
Adalimumab 40mg/0.8ml Pre-filled Syringe	7,140.00	3,060.00	7	9,180.00	1,020.00	2
Erythropoietin (All)	98,207.42	41,763.85	3,865	126,266.68	13,704.59	986
Etanercept 50mg Injection	1,456.00	624.00	3	1,872.00	208.00	1
Filgrastim 300mcg Injection	39,354.00	16,866.00	402	50,598.00	5,622.00	104
Total		62,313.85	4,277		20,554.59	1,093

RESULTS

- The highest amounts of the overall savings (biosimilar lowest price) was \$2,816,264, while the lowest amounts of overall savings were \$938,082 (Biosimilar highest price)
- The amounts of savings could have been re-allocated to purchase a total of 7,809-30,185 extra unit of biosimilar products, which could have gave access to more patients to the biological treatment (Table 1).
- The area that have the highest overall savings was OPP, with a total savings of \$2,816,264 (the lowest biosimilar price), while the area that have the lowest overall savings was the IV Room, with a total savings of \$54,514 (Table 1).
- The highest amounts of savings in the IV room biological products were for Rituximab 100mg/10ml Injection (\$84,954) which could have used to purchase an extra 375 units of the product (Table 2)
- The highest amounts of savings in the IPP biological products were for Erythropoietins (\$41,764) which could have procured an extra of 3,865 units, should the lowest price biosimilar product was adopted (Table 3)

Table 4: Out-Patient Pharmacy (OPP) Savings Based on Year 2020 Biologics Utilization

Drug Name	Total Cost after Biosimilar (lowest)	Savings (Lowest Price)	Number of Extra Units (lowest Cost)	Total Cost after Biosimilar (Highest)	Savings (Highest Price)	Number of Extra Units (Highest Cost)
Adalimumab 40mg/0.8ml Pre-filled Syringe	2,572,080	1,102,320	2,625	3,306,960	367,440	680
Erythropoietin (All)	507,508	217,503	15,013	652,510	72,501	3,892
Etanercept (All)	1,193,556	511,524	2,874	1,534,572	170,508	745
Filgrastim 300mcg Injection	1,767,948	757,692	4,163	2,273,076	252,564	1,079
Total		2,589,039	24,675		863,013	6,397

- The highest amounts of savings in the OPP was for Adalimumab 40mg/0.8ml pre-filled Syringe, which could have procured an extra 2,625 units of the lowest price biosimilar product (Table 4).

CONCLUSIONS

- This study shows that the adoption of biosimilar medications could have resulted in a significant amount of savings on the hospital budget.
- The savings that were calculated; could have been reallocated to other services or for the procurements of the more units of the same biological products which will allow for the access of higher numbers of eligible patients to the biological drugs therapy.
- The results and conclusions of this study should be interpreted very carefully, as not all biosimilar products could be interchangeable. Issues like approved indications and others should be considered when assessing them.

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