AN EXPLORATORY COMPARATIVE EFFECTIVENESS ANALYSIS OF FEBRILE NEUTROPENIA INCIDENCE AMONG PATIENTS WITH CANCER RECEIVING GRANULOCYTE COLONY STIMULATING FACTORS

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ABSTRACT #408

BACKGROUND

- Increased biosimilar availability can increase patient access and decrease the financial burden on patients and health care systems
- It is unknown how biosimilar effectiveness compares with the originator products
- The Biologics and Biosimilars Collective Intelligence Consortium (BBCIC) was established in 2015 to fill the public health gap of monitoring biosimilar effectiveness and safety relative to the originator biologics
- BBCIC's Distributed Research Network (DRN) is uniquely positioned to support pharmacoepidemiologic studies of biologics and biosimilars.

OBJECTIVE

- To conduct an exploratory comparative effectiveness analysis comparing G-CSF biosimilar and originator products in the incidence of febrile neutropenia (FN) among patients with breast, lung, colon, pancreatic, ovarian cancers or non-Hodgkin's lymphoma (NHL) in the BBCIC DRN [receiving chemotherapy of intermediate or high risk per NCNN guideline]

METHODS AND STUDY POPULATION

- Retrospective observational study
- Administrative claims (2015-2019) to assess prophylactic G-CSF originator and biosimilar administration
- BBCIC Data Partner sites: CVS Health Clinical Trial Services, an Aetna affiliate, Harvard Pilgrim Health Care Institute (HPHCI), HealthCore Inc., (Elevance Health), HealthPartners Institute (HPI)
- Patients: 20+; newly diagnosed cancer; any G-CSF originator or biosimilar for FN prophylaxis; 1st cycle of high or intermediate FN risk chemotherapy defined by National Comprehensive Cancer Network guidelines & relevant literature
- FN risk: day 1 after chemotherapy until day 5
- Compared pegfilgrastim and filgrastim products with Poisson regression model with standardized inverse probability weights and robust variance to estimate the Relative Risk (RR) and 95% Confidence intervals (CI)

We found no significant difference in febrile neutropenia risk between pegfilgrastim originators and biosimilars

We found no significant difference in febrile neutropenia incidence between filgrastim originators and biosimilars

Table 1. G-CSF receipt and febrile neutropenia risk described by G-CSF product

	Filgrastim	Filgrastim-sndz	tbo-Filgrastim	Pegfilgrastim	Pegfilgrastim-cbqv	Pegfilgrastim-jmdb
	n=565			n=15,941		
G-CSF receipt by product	284 (50%)	201 (36%)	80 (14%)	15,115 (95%)	484 (3%)	342 (2%)
Febrile neutropenia events	13 (4.6%)	5 (2.5%)	2 (2.5%)	346 (2.3%)	11 (2.3%)	8 (2.3%)

Table 2. Comparative effectiveness of pegfilgrastim products for G-CSF febrile neutropenia prophylaxis during cycle 1 chemotherapy

Comparison	RR	95% CI	P-value
Pegfilgrastim-cbqv to pegfilgrastim	0.83	0.41-1.69	0.61
Pegfilgrastim-jmdb to pegfilgrastim	1.03	0.56-1.92	0.92
Pegfilgrastim-jmdb to pegfilgrastim-cbqv	1.11	0.45-2.74	0.82

RR=Relative risk; CI=Confidence Interval

Table 3. Comparative effectiveness of filgrastim products for G-CSF febrile neutropenia prophylaxis

Contrast Comparisons	RR	95% CI	P-value
Filgrastim-sndz to filgrastim	0.46	0.17-1.28	0.14
tbo-filgrastim to filgrastim	0.30	0.06-1.36	0.12
tbo-filgrastim to filgrastim-sndz	0.54	0.10-2.77	0.46

RR=Relative risk; CI=Confidence Interval

RESULTS

- 16,506 patients received a G-CSF product in cycle 1: 15,941 pegfilgrastim, 565 filgrastim
- No significant difference in FN risk between pegfilgrastim products (Table 2)
- No significant difference in FN incidence between filgrastim products (Table 3)

CONCLUSIONS

- Most patients received a pegfilgrastim product during cycle 1 chemotherapy
- Update of G-CSF biosimilars is occurring in the chemotherapy setting [data not shown]
- We observed no significant differences in FN risk between G-CSF originators and biosimilars

ACKNOWLEDGEMENTS

- We recognize the work of the G-CSF Comparative Effectiveness Research Team: Jaclyn Bosco, Maria Bottorff, Audrey Djibo, Elizabeth Englehardt, Aziza Jamal-Allial, Annemarie Kline, Edward Li, Sam Li, Nancy Lin, Ali McBride, Cheryl McMahill-Walraven, and Gary Yee.

QUESTIONS

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- Funding Support was provided by the BBCIC DRN

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