Real-World Subcutaneous Monoclonal Antibody Use Trends for Oncology in the US

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Abstract

Objectives
Subcutaneous administration of monoclonal antibodies in oncology carries several advantages over intravenous alternatives for both the patient and health-system, including decreased drug preparation and administration time, lower healthcare resource use and cost, and improved patient comfort. Our aim was to characterize their annual use trends in the US over a five-year period (2019-2023).

Methods
We analyzed de-identified data from Trisus Medication Compare (The Craneware Group, Edinburgh, UK) between 1/1/2019-12/31/2023 to identify patient encounters containing a dispensation for subcutaneous formulations of hyaluronidase with rituximab, trastuzumab, daratumumab, and combination pertuzumab and trastuzumab. The primary objective was to characterize annual use trends; secondary objectives included evaluation of use by oncology diagnosis, product, treatment setting, and state.

Results
Dispensations from 47,227 patient encounters were included, with 47,205 for adult patients and only 8 for pediatric patients. The average age was 67.6 years and 53.6% were male. The sample represents 183 health-systems, 58.1% of which are academic medical centers. Almost all use (99.5%) occurred in the outpatient setting. The most common diagnoses were multiple myeloma (75.2%), breast cancer (7.3%), and light-chain amyloidosis (6.5%). Subcutaneous monoclonal antibody use increased annually for the first four years, with peak use in 2022 (n=18,005 dispensations, 38.1%) and lower use in 2023 (n=11,332 dispensations, 24.0%). The most used product was daratumumab with hyaluronidase (82.7% of dispensations), which correlates with the high rate of multiple myeloma in the sample. Rituximab with hyaluronidase accounted for the second most dispensations (10.2%), with associated diagnoses of follicular lymphoma, large B-cell lymphoma, and chronic lymphocytic leukemia. New York (n=8,452 dispensations), Michigan (n=6,132 dispensations), and Massachusetts (n=4,966 dispensations) had the highest use in this sample.

Conclusion
From 2019-2022, national data show increased use of subcutaneous monoclonal antibodies for oncology, an advantageous alternative offering opportunities to enhance patient care and improve cost and resource efficiency.

Background

Subcutaneous administration of monoclonal antibodies in oncology carries several advantages over intravenous alternatives for both the patient and health-system:[1-3]

- ↓ drug preparation and administration time
- ↓ healthcare resource use and cost
- ↑ patient comfort

Development of subcutaneous administration options is a current focus within oncology to realize these benefits while increasing therapeutic options and improving patient satisfaction.

Methods

Objectives

- **Primary:** yearly use trends of subcutaneous monoclonal antibody products
- **Secondary**: yearly subcutaneous monoclonal antibody use by:
  - Treatment setting: academic vs. non-academic center, urban vs. rural, in- vs. outpatient
  - Product
  - Oncology diagnosis (by International Classification of Diseases [ICD]-10 code)
  - State

Study Population

De-identified real-world dispensations of subcutaneous monoclonal antibody products between 1/1/2019 – 12/31/2023 using Trisus Medication Compare

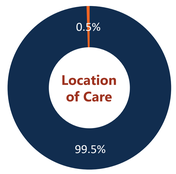
Subcutaneous Product & Common Indication

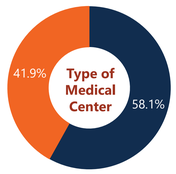
Subcutaneous Product	Common Indication & ICD-10 Code
Atezolizumab and hyaluronidase	Alveolar soft part sarcoma (C49), hepatocellular carcinoma (C22.0)
Daratumumab and hyaluronidase	Light-chain amyloidosis (E85.81), multiple myeloma (C90.0)
Pertuzumab, trastuzumab, and hyaluronidase	Breast cancer (C50)
Rituximab and hyaluronidase	Follicular lymphoma (C82), diffuse large B cell lymphoma (C83.3), chronic lymphocytic leukemia (C91.1)
Trastuzumab and hyaluronidase	Breast cancer (C50)

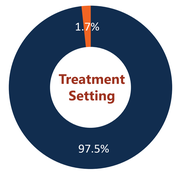
Overall study population (n=47,227 patient encounters)

Population Characteristics

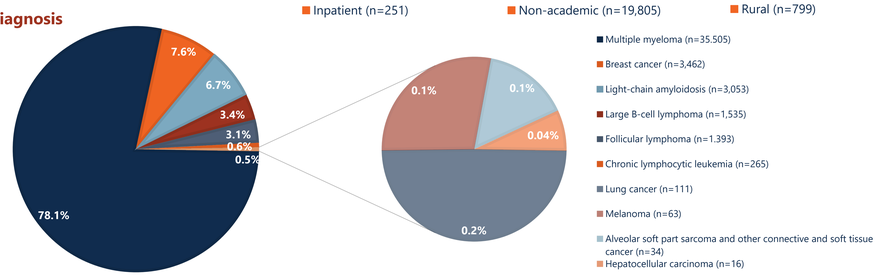
	Population (n=47,227)
Age, mean (years)	67.6
Age <18 years	8 (0.0%)
Age ≥18 years	47,205 (100.0%)
Male, n (%)	25,336 (53.6%)
Covered entities, n	183





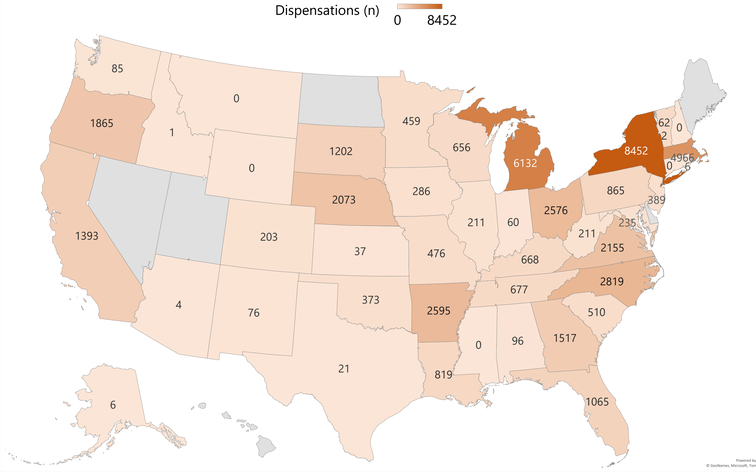


Oncology Diagnosis



Subcutaneous Monoclonal Antibody Use by State

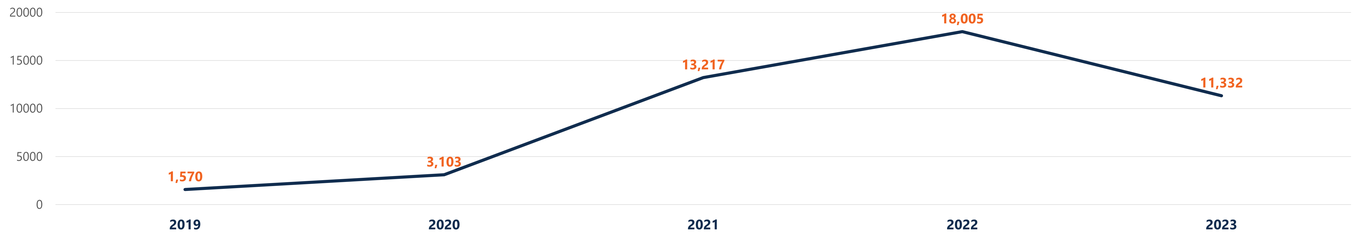
Total dispensations over 5-year study period



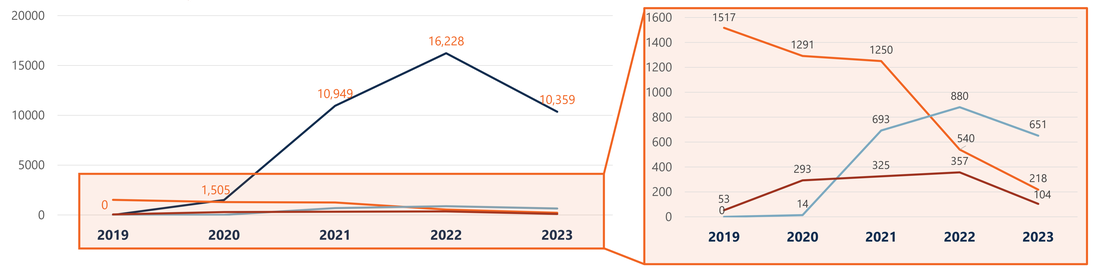
Annual Subcutaneous Monoclonal Antibody Use Trends

In dispensations by year

Overall Use Trend



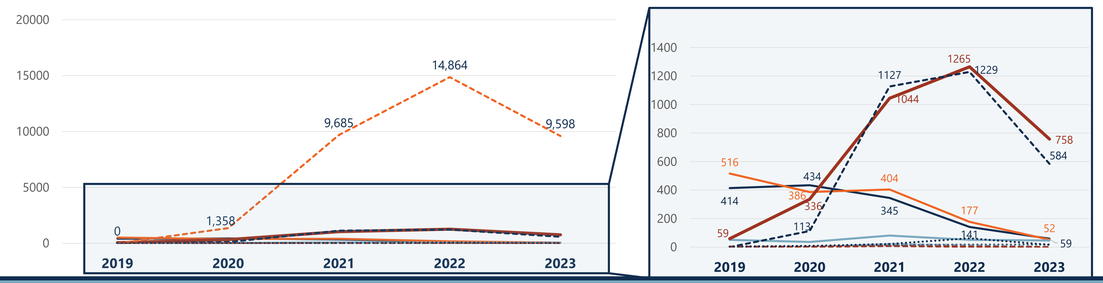
Annual Use Trend by Product



Drug with hyaluronidase:

- Daratumumab (n=39,041)
- Rituximab (n=4,816)
- Pertuzumab & trastuzumab (n=2,238)
- Trastuzumab (n=1,132)

Annual Use Trend by Oncology Diagnosis



- Follicular lymphoma (n=1,393)
- Large B-cell lymphoma (n=1,535)
- Chronic lymphocytic leukemia (n=265)
- Breast cancer (n=3,462)
- Multiple myeloma (n=35,505)
- Light-chain amyloidosis (n=3,053)
- Alveolar soft part sarcoma and other connective and soft tissue cancer (n=34)
- Hepatocellular carcinoma (n=16)
- Melanoma (n=63)
- Lung cancer (n=111)

Discussion & Conclusions

- Subcutaneous monoclonal antibody use increased annually for the first four years, with peak use in 2022 (n=18,005 dispensations, 38.1%) and lower use in 2023 (n=11,332 dispensations, 24.0%).
- Most common diagnosis of multiple myeloma (75.2% of sample) correlated with most used product, daratumumab with hyaluronidase (82.7% of dispensations)
- New York (n=8,452 dispensations), Michigan (n=6,132 dispensations), and Massachusetts (n=4,966 dispensations) had the highest use in this sample.

Limitations

- Determination of indications for use is dependent on ICD-10 diagnosis code and accuracy is dependent on institution performing the coding.
- No access to electronic medical records.

Conclusion
From 2019-2022, national data show increased use of subcutaneous monoclonal antibodies for oncology, an advantageous alternative offering opportunities to enhance patient care and improve cost and resource efficiency.

References

1. Bittner B, Richter W, Schmidt J. Subcutaneous administration of biotherapeutics: an overview of current challenges and opportunities. BioDrugs 2018;32:425-440. Available at: https://link.springer.com/article/10.1007/s40259-018-0295-0.
2. Eisenberg S. Subcutaneous administration: evolution, challenges, and the role of hyaluronidase. Clinical Journal of Oncology Nursing 2021;25:663-671. Available at: https://cjon.ons.org/publications-research/cjon/25/6/subcutaneous-administration-evolution-challenges-and-role.
3. Bittner B, Schmidt J. Advancing subcutaneous dosing regimens for biotherapeutics: clinical strategies for expedited market access. BioDrugs 2024;38:23-46. Available at: https://link.springer.com/article/10.1007/s40259-023-00626-1.

Disclosures

All authors are employees of The Craneware Group, the proprietary owner of the data analytics platform utilized in this study.