Immunoglobulin (IG) therapies remain important treatments for primary immunodeficiency (PI). As PI diagnoses have risen, evolving IG options and care have broad implications on patient health. Treatment settings, in particular IG infusions within the home, have received increasing attention regarding benefits and potential patient impact. Opportunities remain to understand IG home infusion patterns, as data to date has been limited and prior studies have had relatively small sample sizes and/or methodologies that could have potential subjective bias (e.g., surveys).

Objective: This study aimed to understand IG use dynamics among patients with PI in the home infusion setting in a broad US population based cohort, including potential differences within selected subgroups (i.e., IG type [intravenous (IV)/subcutaneous (SC)], gender [male (M)/female (F)], and age [0-16/17-44/45-65+]).

Methods: This retrospective analysis included closed medical and pharmacy claims from US patients of all ages between 01 January 2019 and 31 December 2019. Patients had to have a PI diagnosis (i.e., International Classification of Disease-10 Revision codes indicating PI), ≥1 claims within the study time period, and IG home infusion claims codes. Patients were compared on demographics by IG type, gender, and age using chi-square tests of independence; two-sided p-values <0.05 were considered statistically significant.

Results: Overall, N=27,491 patients with PI infused with IG in the home setting were included in the sample, with 13.8% males and 86.2% females. In IV/SC comparisons, greater proportion of patients with PI were female (F) in both IV and SC, with SC cohort (9.8%) having higher proportion of females compared to proportion of females within IV (6.45%) [p=0.001]. Age distribution of IV patients had greater concentration in older working age (45-64, 41.5%) compared to SC (34.6%) [p=0.001]. SC showed greater concentration in older adults (65%, 30.5%) compared to IV at the same age range (65%, 25.6%) [p=0.001]. Greater proportion of males were at younger ages (0-16, 18.6%) compared to females (23.5%) [p=0.001]. Deeper review based on age subgroup analyses echoed that the 17+ age cohorts had greater proportion females than males [p<0.001]

Discussion: This study provides key insights into dynamic differences that can exist among patients with PI receiving IG infusions in the home setting, based on IG type, gender, and age subgroups. While prior studies have reflected similar age and gender patterns, the current analysis and large sample suggest important IG home infusion trends that can be specific to each patient subpopulation. These perspectives can help facilitate awareness of current trends in IG adoption and inform care discussions between patients and health care providers about IG therapy for PI in the home infusion setting.

Conclusion: These insights suggest important implications for IG adoption in each subgroup and strengthens potential opportunity for developing tailored solutions for each community. Future research should further review longitudinal trends and continue to explore contemporary updates in IG infusion for patients with PI.

Keywords: Primary Immunodeficiency, Immunoglobulin, Home Infusion

**Introduction**

- Immunoglobulin (IG) therapies remain important treatments for primary immunodeficiency (PI) [1].
- As PI diagnoses have risen, evolving IG options and care have broad implications on patient health [1,2].
- Treatment settings, in particular IG infusions within the home, have received increasing attention regarding benefits and potential patient impact[3].
- Opportunities remain to understand IG home infusion patterns, as data to date has been limited [4,5].
- Prior studies have had relatively smaller sample sizes and/or methodologies that could have potential subjective bias (e.g., surveys) [1,5].

Objective

- This study aimed to understand IG use dynamics among patients with PI in the home infusion setting in a broad US population based cohort, including potential differences within selected subgroups (i.e., IG type [intravenous (IV)/subcutaneous (SC)], gender [male (M)/female (F)], and age [0-16/17-44/45-65+]).

Methods

- This was a retrospective observational study that used closed medical and prescription claims data from US-patients diagnosed with PI. Claims data were sourced via FimeMed Healthcare definiited claims databases that contain clinical/prescription encounters in the US, including hospital networks, physician networks, claims clearinghouses, pharmacies, and health insurers.
- Study time period: 01 January 2019 to 31 December 2019
- Inclusion Criteria:
  - Diagnosed with PI (ICD-10 codes: D80.1, D80.2, D80.3, D80.4, D80.5, D80.6, D80.7, D80.8, D81.1, D81.2, D81.5, D81.7, D81.89, D81.9, D82.1, D82.2, D82.4, D83.0, D83.1, D83.2, D83.3, D83.4, D83.5, D83.6, D83.7, D83.8, D83.9, G03.1-9, H16.9, H40.8, H40.9, H54.8, H54.9). Patients must have ≥1 IG claims within the study time period.
- US Region Distribution
- Age Distribution
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Results

- A total of 27,491 patients with PI infused with IG in the home setting in 2019 calendar year and were included as variables reported allowed in respective sample.

Discussion

- While less men are infused with IG compared to women, the distribution of IV and SC among those who receive IG is distributed in similar proportions to the US population [5].
- Greater proportion of men were at younger ages [0-16, 5.6%] compared to women [5.5%].
- Greater proportion of greater age proportion (65-69, 18.0%) were at older working ages (45-64, 41.5%) than men (29.7%) [p=0.001].
- Eight regional distributional differences found between gender [p=0.001].

Figure 2. Subgroup Demographic Comparison by Male (n=9,138) and Female (n=18,059)*

Conclusion

- These insights suggest important implications for IG adoption in each subgroup and strengthens potential opportunity for developing tailored solutions for each community. Future research should further review longitudinal trends and continue to explore contemporary updates in IG infusion for patients with PI.

Keywords: Primary Immunodeficiency, Immunoglobulin, Home Infusion

**References**


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**Disclosure Statement**

- Wing Yu Tang (presenting author) and Donna Palombo are employees and stock stakeholders of Pfizer.
- Connie Sullivan and Bill Noyes of National Home Infusion Association were Pfizer consultants on this IG infusion study.
- Martina Macalitis and Bridget Balkaran are employees of Kantar Health and were Pfizer consultants on this IG home infusion study.