# PRACTICAL NURSING CONSIDERATIONS FOR ADMINISTERING HIGH-DOSE/HIGH-VOLUME HYALURONIDASE-FACILITATED SUBCUTANEOUS IMMUNOGLOBULIN 10% IN PATIENTS WITH CHRONIC INFLAMMATORY DEMYELINATING POLYRADICULONEUROPATHY

Kim Duff,[1] Arianna Soresini,[2] Nancy Wolf,[3]* Sukran Altan,[3] Wendy Bencomo,[4] Alane Fairchild,[3] Ivana Ivankovic,[5] Evelyn Sarpong,[6] Anna Kuczkowska[3]

[1]Takeda Development Center Americas, Inc., Cambridge, MA, USA; [2]IQVIA Clinical Research Organization, Milan, Italy; [3]IQVIA Clinical Research Organization, Cambridge, MA, USA; [4]IQVIA Clinical Research Organization, Mexico City, Mexico; [5]University Clinical Center of Serbia, Belgrade, Serbia; [6]University Health Network, University of Toronto, Toronto, ON, Canada

*At the time of the study.

## INTRODUCTION

- Chronic inflammatory demyelinating polyradiculoneuropathy (CIDP) is a rare immune-mediated neurological disorder leading to symptoms of impaired sensation, fatigue, weakness, pain, and substantial functional impact[1–4]
- Current European Academy of Neurology/Peripheral Nerve Society guidelines recommend intravenous immunoglobulin (IVIG) as a first-line induction or maintenance treatment for CIDP, as well as conventional subcutaneous immunoglobulin (SCIG) as an alternative maintenance therapy for IVIG-responsive patients with active disease[5]
- Hyaluronidase-facilitated subcutaneous immunoglobulin (fSCIG; HYQVIA, Baxalta US, Inc., a Takeda company, Cambridge, MA, USA) was approved in January 2024 by the FDA as maintenance therapy for CIDP and consists of a dual-vial unit of immunoglobulin G (IgG) 10% (GAMMAGARD LIQUID, Baxalta US, Inc.; Kiovig, Takeda Manufacturing Austria AG, Vienna, Austria) and recombinant human hyaluronidase[6,7]
  - fSCIG 10% combines the benefits of IVIG and SCIG and permits increased infusion volumes and rates versus conventional subcutaneous treatments, as well as offering a greater scope for home infusion versus IVIG[8–10]
  - These features increase flexibility for patients requiring high-volume fSCIG 10% administration, such as patients with CIDP
- Individualization of fSCIG 10% regimens could improve patient experiences in CIDP, with nursing professionals playing a vital role in supporting patients with their treatment

## OBJECTIVE

- To review the evidence for fSCIG 10% based on results from the ADVANCE-CIDP 1 trial, and highlight practical nursing considerations to optimize the patient treatment experience in CIDP

## METHODS

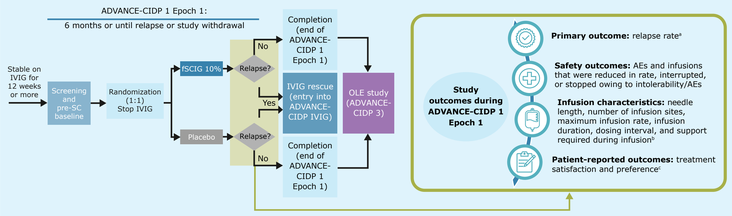
### STUDY DESIGN AND ELIGIBILITY CRITERIA

- ADVANCE-CIDP 1 was a phase 3, randomized, double-blind, placebo-controlled study (NCT02549170) conducted at 54 sites in 21 countries from December 2015 to February 2022 (**Figure 1**), with full details reported in a prior publication[11]
  - Eligible patients were adults with definite or probable CIDP (excluding focal/pure sensory atypical disease), adjusted Inflammatory Neuropathy Cause and Treatment (INCAT) disability scores of 0–7 inclusive, and who were IgG-responsive and receiving stable IVIG for ≥ 12 weeks
- Patients were randomized to fSCIG 10% or placebo (0.25% albumin and lactated Ringer's solutions with recombinant human hyaluronidase) for 6 months or until relapse/discontinuation
  - Using a dose ramp-up schedule, infusion volumes were gradually increased to target dose levels
- Infusion rates were also slowly increased over 5–15-minute intervals to allow assessment of patient tolerance, with infusion rates based on the type of needle used for infusion
  - fSCIG 10% was administered at the same dose and interval as each patient's pre-randomization monthly equivalent IVIG dose (or matching infusion volume for placebo), with maximum 4-weekly administration
- A 'Train the Trainer' program was provided by a group of Clinical Trial Educators from the clinical research organization to support study-site nurses in high-volume fSCIG 10% administration
  - The program aimed to ensure a positive experience for nurses and to instill confidence in administration and the training of others, and ultimately to improve the patient experience
- The primary study outcome was relapse rate, assessed by the proportion of patients experiencing worsening functional disability (defined as an increase of at least 1 point relative to baseline in two consecutive adjusted INCAT disability assessments obtained no more than 7 days apart)
  - Additional study outcomes are shown in **Figure 1**

### STATISTICAL ANALYSIS

- The primary efficacy analysis compared relapse rates using a continuity-corrected $\chi^2$ test conducted at the 5% level of statistical significance, with missing data imputed as no relapse
- Adverse events (AEs) were coded using the Medical Dictionary for Regulatory Activities version 24.1 or higher. Data on AEs, infusion characteristics, and treatment satisfaction and preference were summarized descriptively

### FIGURE 1. STUDY DESIGN AND OUTCOMES




[a]Proportion of patients with worsening functional disability (≥ 1-point increase vs baseline in two consecutive adjusted INCAT disability scores ≤ 7 days apart); [b]Data on infusion characteristics were captured using electronic patient diaries (DIARYpro); [c]Treatment satisfaction and preference were evaluated through use of the abbreviated TSQM-9 and a non-validated treatment preference questionnaire.

The current study was split into two "epochs," with the results of Epoch 1 reported in the current manuscript (ADVANCE-CIDP IVIG reflects Epoch 2 of the study). In Epoch 1, patients were randomized 1:1 to fSCIG 10% or placebo for a period of 6 months or until relapse or study withdrawal. Study design figure originally published in Bril, Vera, et al. "Hyaluronidase facilitated subcutaneous immunoglobulin 10% as maintenance therapy for chronic inflammatory demyelinating polyradiculoneuropathy: the ADVANCE-CIDP 1 randomized controlled trial." Journal of the Peripheral Nervous System. 2023.[11]

AE, adverse event; CIDP, chronic inflammatory demyelinating polyradiculoneuropathy; fSCIG, facilitated subcutaneous immunoglobulin; INCAT, Inflammatory Neuropathy Cause and Treatment; IVIG, intravenous immunoglobulin; OLE, open-label extension; SC, subcutaneous; TSQM-9, 9-item Treatment Satisfaction Questionnaire for Medication.

## RESULTS

### PATIENT DEMOGRAPHICS

- Overall, 132 patients were enrolled and received fSCIG 10% (n = 62) or placebo (n = 70) during ADVANCE-CIDP 1
  - Patients had a mean age of 54.4 years, the majority were male (56.1%), and mean body mass index (BMI) was 28.0 kg/m$^2$ ('Overweight' BMI category) across all individuals
  - Additional patient characteristics have been published[11]

### RELAPSE RATE

- ADVANCE-CIDP 1 achieved its primary endpoint: fSCIG 10% significantly reduced CIDP relapse rate versus placebo (n = 57 [14.0%] vs n = 65 [32.3%] patients, respectively; absolute difference: −18.3%, $P$ = 0.0314)

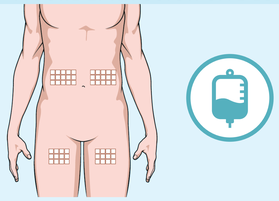
### SAFETY AND TOLERABILITY

- In total, 491 AEs were reported in 89 patients, with event rates of 0.39 per infusion, 3.72 per patient, and 8945.42 per 1000 patient-years
- With fSCIG 10%, 24 patients (38.7%) experienced 141 local AEs and 43 (69.4%) reported 201 systemic events, versus 8 patients (11.4%) reporting 20 local and 39 (55.7%) reporting 129 systemic events with placebo
- Treatment-related AEs occurred in 38 patients (61.3%) receiving fSCIG 10% and 19 patients (27.1%) receiving placebo, with the most common (> 5% of patients) being infusion/injection site erythema, infusion/injection site pain, nausea, pruritus, infusion/injection site edema, headache, infusion/injection site pruritus, and fatigue
  - Fewer patients reported treatment-related severe AEs with fSCIG 10% than with placebo (1.6% vs 4.3%)
- Of 1247 infusions administered, 72 (5.8%) were interrupted, stopped, or reduced in rate; only 0.3% were affected by intolerability

### INFUSION AND ADMINISTRATION CHARACTERISTICS

- Details of infusion characteristics are provided in **Figure 2** and **Figure 3**

### FIGURE 2. INFUSION SITE LOCATIONS DURING ADVANCE-CIDP 1

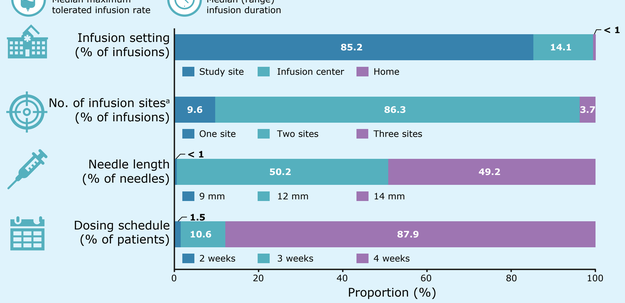


Patients could receive infusions into the **left-hand or right-hand side** of the **abdomen**, or **left or right thigh**, in the region of the **middle to upper abdomen or thighs**

If using three sites, sites should be placed **10 cm apart**

If a bifurcated needle set was used, sites should have been on the opposite sides of the body.
CIDP, chronic inflammatory demyelinating polyradiculoneuropathy.

### FIGURE 3. INFUSION CHARACTERISTICS FOR PATIENTS IN ADVANCE-CIDP 1




[a]Data were missing for 0.5% of infusions with respect to data on the number of infusion sites used.
Data are reported for all patients enrolled and dosed in ADVANCE-CIDP 1. Owing to multiple blood samples and the need for monthly INCAT assessments, home care was not an option for infusion setting in some European Union (EU) countries due to regional regulations.
CIDP, chronic inflammatory demyelinating polyradiculoneuropathy; INCAT, Inflammatory Neuropathy Cause and Treatment.

- Overall, 24.3% of infusions were administered by patients and/or caregivers, with 55.8% of all infusions requiring assistance from a healthcare professional during administration (**Figure 4**)
  - Assistance was most commonly required in relation to infusion steps/procedures (51.0%) or to the infusion pump/administration set (50.2%; **Figure 4**)
  - Overall, 12.9% of patients required a 2-day regimen to administer treatment
  - Nursing support was particularly important at the beginning of treatment to guide patients in performing and managing infusions, although at some study sites home self-infusions were not permitted owing to regional regulations

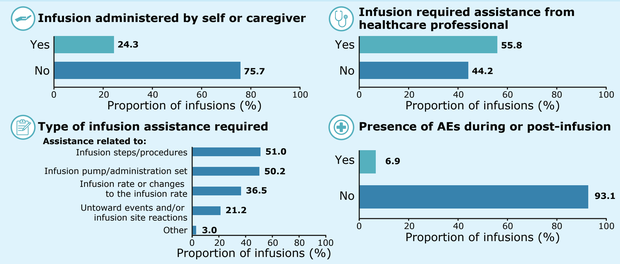
### TREATMENT SATISFACTION AND PREFERENCE

- At treatment end, mean 9-Item Treatment Satisfaction Questionnaire for Medication (TSQM-9) global satisfaction scores were higher with fSCIG 10% (65.3) than with placebo (55.7)
  - Overall, 57.9% of patients found fSCIG 10% 'easy' to 'extremely easy' to use, and 77.2% found use of fSCIG 10% to be 'convenient' to 'extremely convenient'
- Both groups demonstrated overall preferences for facilitated subcutaneous treatment: 66.7% of fSCIG 10% and 70.6% of placebo patients preferred it to prior IVIG, and 83.3% and 92.2%, respectively, would choose to continue treatment

## DISCUSSION

- Local infusion site reactions are among the most common AEs reported with fSCIG 10%
  - Nurses can help to manage these events and the intolerability of high-volume fSCIG 10% through consideration of needle placement and length, patient position during infusion, and initial use of bifurcated needle sets during the ramp-up period. Reminding patients to wear comfortable clothing may also meaningfully improve patient experiences
- Nursing professionals hold a vital role in both training and supporting patients with their infusions, and nurse knowledge and confidence are key during patient education for self-administration of fSCIG 10%
  - The nurse working most closely with the patient should assess whether they have the strength and dexterity to perform techniques requiring fine motor skills (such as connecting pump tubing to the needle set and insertion of needle into the skin), and whether the patient has a caregiver to support them if they are unable to do so
- The duration of fSCIG 10% infusion may facilitate single-day administration for high doses, potentially benefiting patients by reducing treatment burden and the associated lost working time, travel duration, and financial expenses (such as staying overnight for multi-day therapy [3–5 days with IVIG maintenance therapy regimens])
- Treatment preference findings suggest that infusion volumes administered were well tolerated for both blinded facilitated subcutaneous therapies, with placebo patients likely in remission at the time of measurements at study end

### FIGURE 4. INFUSION ADMINISTRATION DURING ADVANCE-CIDP 1




A single dose may have required multiple infusions. For the type of assistance required, the sum of the percentages may exceed 100% as the question allowed multiple responses.
AE, adverse event; CIDP, chronic inflammatory demyelinating polyradiculoneuropathy.

## CONCLUSIONS

**Patients in both groups demonstrated overall preferences for facilitated subcutaneous therapy, with most patients preferring study treatment to their prior IVIG**

**Nursing professionals play a key role in supporting individualization of fSCIG 10% treatment and improving patient experiences in CIDP, and can empower patients in optimizing their own care**

**Realistic patient expectations should be set and appropriately managed during treatment**

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**This poster is intended for healthcare professionals**

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### DISCLOSURES

**KD** is an employee of Takeda Development Center Americas, Inc. and a Takeda shareholder. **AS, SA, WB, AF,** and **AK** are employees of IQVIA Clinical Research Organization and acted as Clinical Trial Educators during the study. IQVIA Clinical Research Organization received funding from Takeda for the conduct of the study. **NW** was an employee of IQVIA Clinical Research Organization at the time of the study. IQVIA Clinical Research Organization received funding from Takeda for the conduct of the study. **II** is an employee of the University Clinical Center of Serbia, Belgrade, Serbia, and acted as study nurse during the study and, as a member of the study team, received funding from Takeda. **ES** has nothing to disclose.

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