REAL-WORLD UTILIZATION, SAFETY AND PATIENT EXPERIENCE OF 20% SUBCUTANEOUS IMMUNOGLOBULIN IN PATIENTS WITH PRIMARY IMMUNODEFICIENCIES: FINAL DATA FROM THE CORE STUDY

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INTRODUCTION

- Immune globulin subcutaneous (human) 20% solution (Ig20Gly [Cuvitru; Baxalta Innovations GmbH, Vienna, Austria]) is a subcutaneous immunoglobulin (SCIG) therapy used to treat patients with primary immunodeficiencies (PID), who often require lifelong immunoglobulin G (IgG) replacement.[1]
- As with other SCIG products, Ig20Gly gives patients flexibility to infuse at home, but its highly concentrated formulation allows for smaller infusion volumes and higher infusion rates than less-concentrated alternatives.[2–4]
- The efficacy and favourable safety profile of Ig20Gly have been demonstrated in two pivotal phase 2/3 clinical trials (NCT01412385, NCT01218438) in adult and paediatric IgG-experienced patients with PID in Europe and North America,[3,4] and real-world studies to date have shown infusion characteristics similar to the pivotal clinical trials.[5–7]

OBJECTIVE

- To provide a detailed understanding of the real-world use of Ig20Gly in patients with PID in Germany and Switzerland.

METHODS

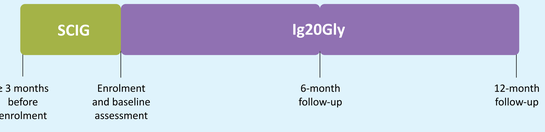
- The CORE study was a phase 4, non-interventional, prospective, longitudinal cohort study (German Clinical Trials Register: DRKS00014562) conducted at five sites in Germany and Switzerland between 27 November 2018 and 30 November 2021.
- Included patients could be of any age, were diagnosed with PID involving a defect in antibody formation requiring immunoglobulin replacement therapy and had received a stable dose of any SCIG for at least 3 months before enrolment.
- Study design and assessments are summarized in **Figure 1**. Data were collected at baseline and at 6- and 12-month follow-up visits from patient medical records and patient-reported outcome questionnaires.
  - The primary outcome measure was maximum infusion rate.
- Statistical analysis was descriptive and performed on the total cohort; no statistical hypothesis was tested.

RESULTS

PATIENTS

- In total, 36 patients were enrolled and provided data at baseline, 23 patients attended a 6-month follow-up visit and 26 patients attended a 12-month follow-up visit. Sixteen patients attended all three visits.
  - In a deviation from the protocol, patients who received IVIG or no SCIG therapy before enrolment were included in the study.

FIGURE 1. STUDY DESIGN AND ASSESSMENTS.



Data collected at baseline
Patient characteristics
Concomitant diseases/medications
SCIG treatment history
Ig20Gly dosing/administration/ infusion characteristics
IgG levels
Adverse events
Tolerability
Infections
PROs (LQI/TSQM-9)
Healthcare resource utilization[a]

Data collected during follow-up
Ig20Gly dosing/administration/ infusion characteristics
IgG levels
Adverse events
Tolerability
Infections
PROs (LQI/TSQM-9)
Healthcare resource utilization[a]

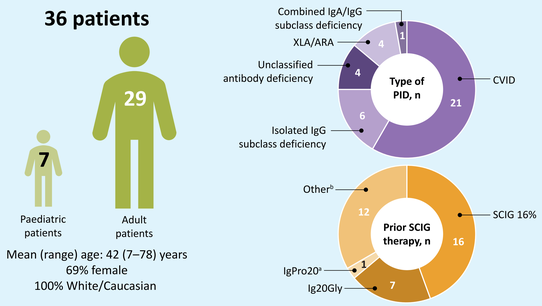
[a]Healthcare resource utilization data are not included in this poster.
Ig20Gly, immune globulin subcutaneous (human) 20% solution; IgG, immunoglobulin G; LQI, Life Quality Index; PRO, patient-reported outcome; SCIG, subcutaneous immunoglobulin; TSQM-9, 9-item Treatment Satisfaction Questionnaire for Medication.

- One patient withdrew consent before the 6-month follow-up visit. No patients discontinued owing to adverse events, death, pregnancy or physician decision; no patients were lost to follow-up.
- Baseline patient demographics, clinical characteristics and SCIG treatment history are shown in **Figure 2**.
  - Common variable immunodeficiency was the most common type of PID in this study population.
  - Patients had most commonly received immune globulin subcutaneous (human) 16% solution (SCIG 16% [Subcuvia; Baxalta Innovations GmbH, Vienna, Austria];[8] 16 patients [44.4%]) prior to enrolment.

Ig20GLY INFUSION, DOSING AND ADMINISTRATION CHARACTERISTICS

- Infusion and dosing characteristics of the most recent infusion received by patients are presented in **Table 1**.
  - Median maximum infusion rates at baseline, 6 and 12 months were 26.7, 24.5 and 40.0 mL/hour, respectively (range: 10–60 mL/hour at all time points).
  - Other infusion and dosing parameters remained broadly consistent at all time points.
- At all time points, patients most commonly infused into the abdomen and all patients used an infusion pump.
- Infusion administration characteristics are shown in **Figure 3**.
  - All but one patient (at baseline) infused at home, most patients administered the infusion themselves and most patients infused once weekly.

FIGURE 2. BASELINE PATIENT DEMOGRAPHICS, CLINICAL CHARACTERISTICS AND SCIG TREATMENT HISTORY.



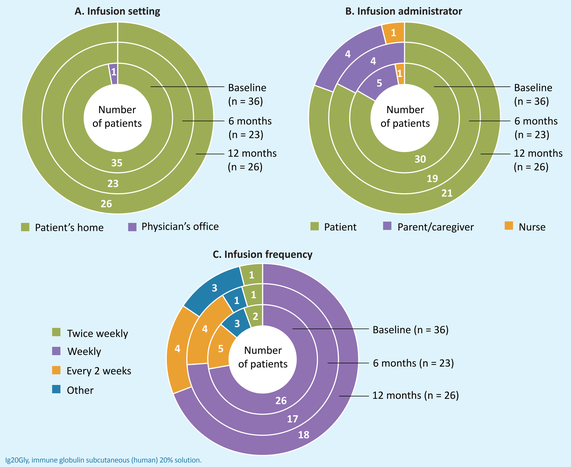
[a]Immune globulin subcutaneous (human) 20% liquid (Hizentra [CSL Behring AG, Bern, Switzerland]).[13] [b]Free-text entries in the 'other' category were 'Grifols study medication 20 Perc. SCIG' (n = 1), 'Kiovig intravenous' (n = 1) and 'none' (n = 10).
ARA, autosomal recessive agammaglobulinaemia; CVID, common variable immunodeficiency; Ig20Gly, immune globulin subcutaneous (human) 20% solution; IgA, immunoglobulin A; IgG, immunoglobulin G; SCIG, subcutaneous immunoglobulin; XLA, X-linked agammaglobulinaemia.

TABLE 1. Ig20GLY INFUSION AND DOSING PARAMETERS OF THE MOST RECENT INFUSION AT EACH TIME POINT.

Parameter	Baseline (n = 36)		6 months (n = 23)		12 months (n = 26)	
	n	Median (range)	n	Median (range)	n	Median (range)
Maximum infusion rate, mL/hour	21	26.7 (10.0–60.0)	20	24.5 (10.0–60.0)	14	40.0 (10.0–60.0)
Monthly dose by body mass, g/kg	36	0.4 (0.1–0.8)	23	0.5 (0.1–1.4)	26	0.5 (0.1–0.9)
Total volume, mL	25	40.0 (10.0–100.0)	19	30.0 (10.0–50.0)	18	35.0 (10.0–100.0)
Infusion duration, minutes	26	60.0 (40.0–120.0)	20	60.0 (25.0–150.0)	23	60.0 (20.0–135.0)
Number of infusion sites	30	2.0 (1.0–3.0)	20	2.0 (1.0–3.0)	23	2.0 (1.0–2.0)
Serum IgG, g/L	31	9.4 (4.8–16.0)	19	9.6 (6.0–13.9)	16	9.2 (4.5–11.4)

Ig20Gly, immune globulin subcutaneous (human) 20% solution; IgG, immunoglobulin G.

FIGURE 3. Ig20GLY ADMINISTRATION CHARACTERISTICS.



Ig20Gly, immune globulin subcutaneous (human) 20% solution.

SAFETY, TOLERABILITY AND INFECTIONS

- Adverse drug reactions and infections during follow-up are presented in **Table 2**.
- At 12 months, four adverse reactions were recorded in three patients during or within 72 hours of the infusion; no adverse drug reactions were recorded at 6 months.
- In total, 10 adverse events were reported in eight patients at or between visits; none were rated as serious by the investigator.
  - Two were considered probably related, two possibly related and six not related to the study medication.
- One acute serious bacterial infection was reported at 12 months; no acute serious bacterial infections were reported at 6 months.

PATIENT-REPORTED OUTCOMES

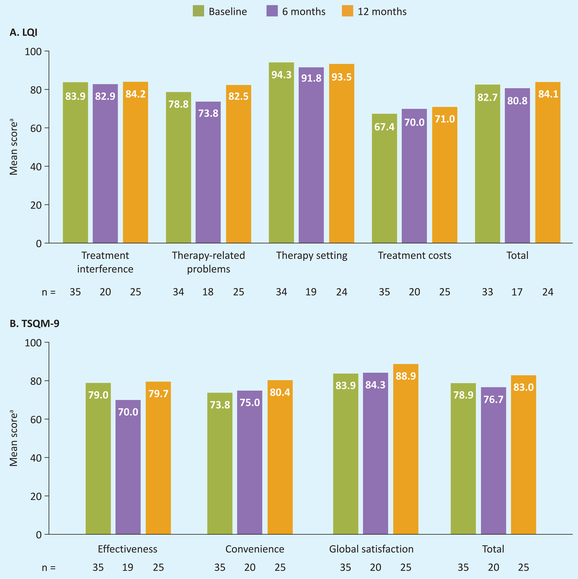
- Life Quality Index (LQI)[9,10] and 9-item Treatment Satisfaction Questionnaire for Medication (TSQM-9)[11,12] scores are shown in **Figure 4**.
  - Total mean LQI and TSQM-9 scores remained high (indicating better quality of life [LQI] or increased satisfaction [TSQM-9]) throughout the study.

TABLE 2. SUMMARY OF SAFETY, TOLERABILITY AND INFECTION OUTCOMES.

Parameter	6 months (n = 23)	12 months (n = 26)
Adverse drug reactions[a]		
Patients, n (%)	0 (0)	3 (11.5)
Events, n	0	4
At least one bacterial infection,[b,c] n (%)	7 (30.4)	7 (26.9)
Bacterial infections requiring antibiotic treatment,[d] n (%)	6 (26.1)	5 (19.2)
Acute serious bacterial infections,[c] n (%)	0 (0.0)	1 (3.8)
Length of hospital stay for infection,[c] mean (SD), days	0.1 (0.4)	0 (0.0)[e]

[a]Events reported up to 72 hours after the most recent Ig20Gly infusion (local: haematoma and redness; systemic: tiredness and chills, but no fever during the infusion). [b]Not including acute serious bacterial infections. [c]Events reported since the last visit. [d]No patients were hospitalized for infection at 12 months.
Ig20Gly, immune globulin subcutaneous (human) 20% solution; SD, standard deviation.

FIGURE 4. PATIENT-REPORTED OUTCOME TOTAL SCORES.



[a]Scores range 0–100, with higher scores indicating higher quality of life (LQI) or better satisfaction (TSQM-9).
LQI, Life Quality Index; TSQM-9, 9-item Treatment Satisfaction Questionnaire for Medication.

CONCLUSIONS

The CORE study adds to the body of real-world evidence concerning the flexibility, feasibility and tolerability of Ig20Gly infused via a pump, mostly in weekly intervals over a 1-year period in patients with PID in Germany and Switzerland.

Findings, including the low rates of acute serious bacterial infections, are generally consistent with other clinical and real-world evidence studies to date.

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DISCLOSURES
MF has participated in advisory boards for Baxalta/Shire, has received honoraria for lectures from CSL Behring and Shire, and received travel grants from Octapharma until 2018. **MBo** has received research grants to his institution from Baxalta, CSL Behring and Octapharma; and he has participated in advisory boards for CSL Behring, Octapharma and Shire. **MBi** has received a grant from Takeda. **CP** has nothing to disclose. **DP** reports personal fees from Amgen, Aspen, Bayer, Biogen, Boehringer Ingelheim, Daiichi Sankyo, Janssen, MSD, Sandoz and Sanofi outside the submitted work, and has acted as a consultant for Baxalta. **MP** is an employee of Takeda Development Center Americas, Inc. and a Takeda shareholder. **AG** is an employee of Takeda Pharmaceuticals International AG and a Takeda shareholder. **PJ** has participated in advisory boards for AstraZeneca, CSL Behring, GSK, Sanofi and Shire, has received honoraria for lectures from CSL Behring and Shire, has received travel grants from Biotest, CSL Behring, Octapharma and Shire, and has received research grants to his institution from AstraZeneca, CSL Behring, Novartis and Shire.

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