TIME TO ONSET OF A MINIMAL CLINICALLY IMPORTANT DIFFERENCE IN DLQI WITH GUSELKUMAB TREATMENT IN VOYAGE 1

K.A. Papp,[1,2] R.G. Langley,[3] D.N. Adam,[1,4,5] V. Ho,[6] L. Park-Wyllie,[7] M. Miller,[8] Y. You,[8] Y.-W. Yang,[9] N. Abbarin,[7] M.J. Gooderham[1,10,11]

[1]Probity Medical Research Inc., Waterloo, ON, Canada; [2]K Papp Clinical Research, Waterloo, ON, Canada; [3]Dalhousie University, Halifax, NS, Canada; [4]Temerty Department of Medicine, University of Toronto, Toronto, ON, Canada; [5]CCA Medical Research and Probity Medical Research, Ajax, ON, Canada; [6]Department of Dermatology and Skin Science, University of British Columbia, Vancouver, BC, Canada; [7]Janssen Medical Affairs, Janssen Inc, Toronto, ON, Canada; [8]Janssen Research & Development, LLC, Spring House, PA, USA; [9]Immunology Global Medical Affairs, Janssen Pharmaceutical Companies of Johnson & Johnson, Horsham, PA, USA; [10]SKiN Centre for Dermatology, and Probity Medical Research, Peterborough, ON, Canada; [11]Queen's University, Kingston, ON, Canada

BACKGROUND/OBJECTIVE

Patients with psoriasis may experience reduced health-related quality of life (HRQoL), which can include negative effects on psychological health, interpersonal relationships, sexual function, and work productivity[1]

In the Phase 3 VOYAGE 1 trial, guselkumab (GUS) demonstrated clinical benefit, including improvements in patient-reported outcomes compared with placebo and adalimumab (ADA)[2]

The interval from treatment initiation to clinically meaningful HRQoL response is an important factor when making treatment decisions for patients with psoriasis

The objective of this analysis was to evaluate the estimated time to onset of the minimal clinically important difference (MCID) in the HRQoL of GUS-treated patients from VOYAGE 1

METHODS

- In VOYAGE 1 (N=837), patients were randomized as follows:[2]
  - GUS 100 mg administered by subcutaneous (SC) injection at Weeks 0, 4, and 12, then every 8 weeks (q8w)
  - Placebo at Weeks 0, 4, and 12, followed by GUS 100 mg SC at Weeks 16 and 20, then q8w
  - ADA 80 mg SC at Week 0, 40 mg at Week 1, then 40 mg q2w through Week 47
- At Week 52, patients entered open-label GUS treatment through Week 252
- Efficacy was assessed through Week 252, and safety was assessed through Week 264
- For a subset of VOYAGE 1 patients with baseline Dermatology Life Quality Index (DLQI) score >4, DLQI scores and associated percent change from baseline in Psoriasis Area and Severity Index (PASI) were analyzed at Weeks 0, 8, 16, and 24
- The DLQI is a 10-question self-report measure for HRQoL ranging from 0 (no impact) to 30 (maximum impact) that assesses the effect of skin conditions on 6 HRQoL domains
  - Higher scores indicate more impact on HRQoL
  - An accepted MCID in DLQI score is 4 points, which was previously reported as the smallest difference in total DLQI score that patients rate as beneficial[3]
- The earliest time to onset of 4-point difference in DLQI score and corresponding percent change from baseline in PASI was estimated using linear interpolation between Weeks 0 and 8

CONCLUSIONS

- **Among GUS-treated patients in VOYAGE 1 with DLQI score >4 at baseline,**
  - **a clinically meaningful *mean* change in DLQI score was achieved within an estimated 3.0 weeks after the first dose, which corresponded to a *mean* PASI improvement of 29.2%**
  - **a clinically meaningful *median* change in DLQI score was achieved within an estimated 2.7 weeks after the first dose, which corresponded to a *median* PASI improvement of 27.7%**
- **These data suggest that the onset of clinically meaningful improvements in HRQoL occur as early as after the first dose of GUS in patients with moderate-to-severe plaque psoriasis**
- **The data also indicate robust response to GUS treatment in patients with a wide range of baseline DLQI scores (interquartile range, 10–20) and a median baseline score of 15.0, which significantly improved to a median DLQI score of 1.0 (interquartile range, 0–5) in 16 weeks**
- **Limitation: This analysis assumes that HRQoL is linearly related to disease severity**

RESULTS

Table 1. Baseline Demographics and Disease Characteristics of GUS-treated Patients With DLQI Score >4 at Baseline

Characteristic	GUS (n=279)
Age (years), mean (SD)	43.4 (12.7)
Male, n (%)	199 (71.3)
White, n (%)	214 (76.7)
BMI (kg/m^2), mean (SD)	29.6 (6.4)
Psoriasis disease duration (years), mean (SD)	17.6 (12.1)
Age at diagnosis (years), mean (SD)	26.0 (13.2)
Patients with psoriatic arthritis at baseline, n (%)	56 (20.1)
BSA (%), mean (SD) / median (range)	28.6 (17.3) / 22.0 (10–90)
PASI score (0–72), mean (SD) / median (range)	22.3 (9.4) / 19.0 (12–68)
PASI score, n (%)	
≥20	126 (45.2)
<20	153 (54.8)
IGA score, n (%)	
Moderate (3)	210 (75.3)
Severe (4)	69 (24.7)
Prior medication use, n (%)	
Biologics*	62 (22.2)
Anti-TNFα agents**	30 (10.8)
IL-12/23 inhibitors†	29 (10.4)
IL-17 inhibitors‡	12 (4.3)

BMI=body mass index; BSA=body surface area; IGA=Investigator's Global Assessment; IL=interleukin; SD=standard deviation; TNF=tumor necrosis factor.
**Includes etanercept, infliximab, alefacept, efalizumab, ustekinumab, briakinumab, secukinumab, ixekizumab, or brodalumab; **includes etanercept or infliximab; †includes ustekinumab or briakinumab; ‡includes secukinumab, ixekizumab, or brodalumab.*

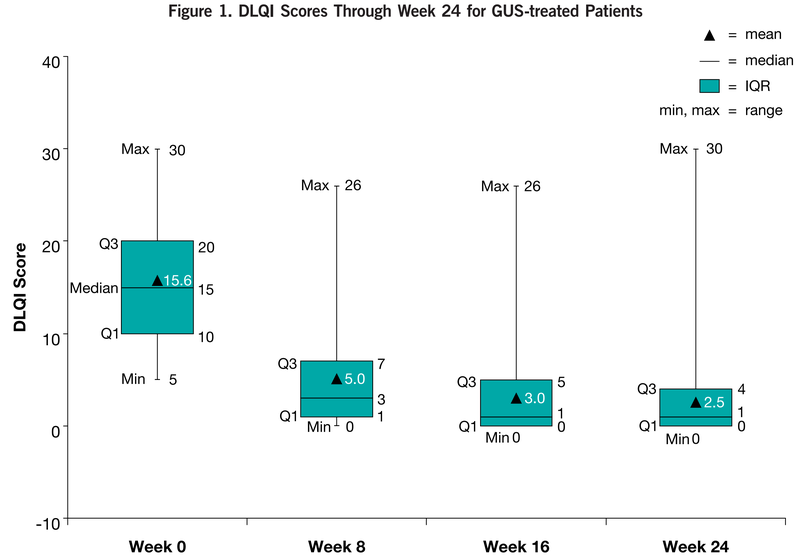
- **Among patients randomized to GUS, 85% (n=279) had DLQI score >4 at baseline**
- **During treatment with GUS, mean DLQI score decreased from 15.6 at baseline to 5.0 at the first assessment at Week 8; median DLQI score decreased from 15.0 to 3.0 (Table 2; Figure 1)**

Table 2. DLQI Scores Through Week 24 for GUS-treated Patients (n=279)

Week	Mean (SD)	Median (Range; IQR)
0	15.6 (6.6)	15.0 (5–30; 10–20)
8	5.0 (4.9)	3.0 (0–26; 1–7)
16	3.0 (4.0)	1.0 (0–26; 0–5)
24	2.5 (4.1)	1.0 (0–30; 0–4)

IQR=interquartile range; SD=standard deviation.

Figure 1. DLQI Scores Through Week 24 for GUS-treated Patients



Max=maximum; min=minimum; Q1=end of the first quartile; Q3=end of the third quartile.

During treatment with GUS, mean percent improvement from baseline in PASI was 77.9% at the first assessment at Week 8; median percent improvement from baseline in PASI was 83.1% (Table 3)

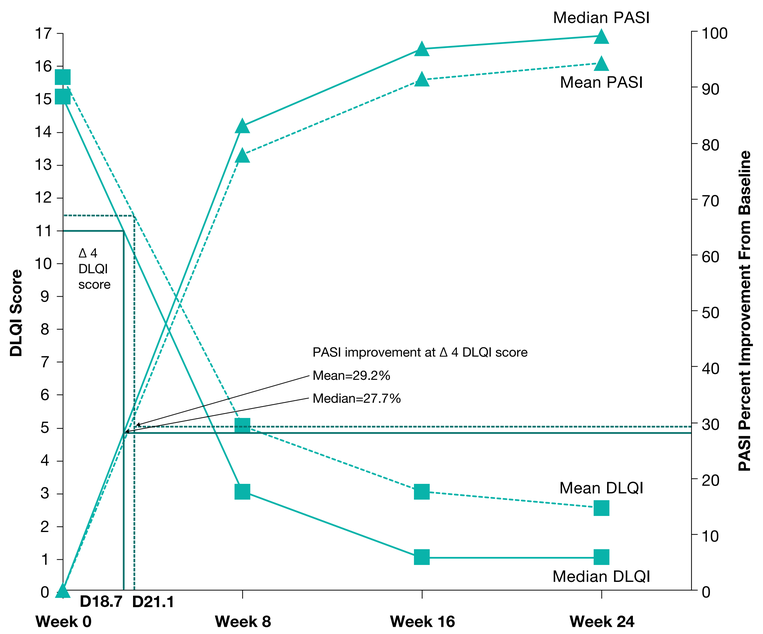
Table 3. PASI Percent Improvement From Baseline Through Week 24 for GUS-treated Patients (n=279)

Week	Mean (SD)	Median (Range; IQR)
8	77.9 (20.2)	83.1 (-7.7–100.0; 67.4–93.2)
16	91.5 (14.8)	96.9 (-16.9–100.0; 88.5–100.0)
24	94.3 (12.4)	99.2 (-38.5–100.0; 93.5–100.0)

IQR=interquartile range; SD=standard deviation.

- **The interpolated onset of MCID in *mean* DLQI score occurred at 21.1 days (3.0 weeks) following the initial GUS dose, with a corresponding estimated *mean* PASI improvement of 29.2% (Figure 2)**
- **The interpolated onset of MCID in *median* DLQI score occurred at 18.7 days (2.7 weeks) following the initial GUS dose, with a corresponding estimated *median* PASI improvement of 27.7% (Figure 2)**

Figure 2. Estimated Time to Onset of MCID in DLQI Score for GUS-treated Patients



Δ=change; D=day

Acknowledgments
Medical writing support was provided by Cindy C. Taylor of Certara Synchrogenix under the direction of the authors in accordance with Good Publication Practice guidelines (*Ann Intern Med.* 2015;163:461-464) and was funded by Janssen Scientific Affairs, LLC.
This presentation was supported by Janssen Research & Development, LLC, Spring House, PA, USA

Disclosures
K. Papp has received clinical research grants and/or honoraria as a consultant and/or speaker and/or investigator and/or scientific officer and/or advisory board member and/or Steering Committee member for AbbVie, Akros, Amgen, Anacor, Arcutis, Avillion, Bausch Health/Valeant, Boehringer Ingelheim, Bristol-Myers Squibb, Can-Fite Biopharma, Celgene, Celltrion, Coherus, Dermavant, Dermira, Dice Pharmaceuticals, Dow Pharma, Eli Lilly, Evelo, Galderma, Gilead, GSK, Incyte, Janssen, Kyowa Hakko Kirin, Leo, Meiji Seika Pharma, Merck (MSD), Mitsubishi Pharma, Novartis, Pfizer, Regeneron, Reistone, Roche, Sanofi-Aventis/Genzyme, Sandoz, Sun Pharma, Takeda, UCB, vTv Therapeutics, and Xencor. **R.G. Langley** has served and received compensation in the form of grant funding and/or honoraria as principal investigator and is on the scientific advisory board or has served as a speaker for AbbVie, Amgen, Boehringer Ingelheim, Celgene, Eli Lilly, Janssen, LEO Pharma, Merck, Novartis, Pfizer, Sun Pharma, and UCB. **D.N. Adam** has been an investigator, speaker, or advisory board member for Leo Pharma Inc, AbbVie, Amgen, Actelion, Arcutis, Bausch Health, Boehringer Ingelheim, BMS, Celgene, Coherus, Dermira, Dermavant, Eli Lilly, Galderma, Incyte, Janssen, Merck, Novartis, Pfizer, Regeneron, Sanofi Genzyme, Sun Pharma, and UCB. **V. Ho** has served as an advisory board participant, investigator, and/or speaker for AbbVie, Janssen, Eli Lilly, Novartis, and Sanofi. **M. J. Gooderham** has been a speaker, invesgator or advisory board member for AbbVie, Amgen, Akros, AnaptysBio, Arcutis, Arena, Aslan, Bausch Health, Boehringer Ingelheim, BMS, Celgene, Coherus, Dermira, Dermavant, Eli Lilly, Galderma, GSK, Incyte, Janssen, Kyowa Kirin, LEO Pharma, Medimmune, Merck, Moonlake, Nimbus, Novartis, Pfizer, Regeneron, Reistone, Sanofi Genzyme, Sun Pharmaceuticals, and UCB. **L. Park-Wyllie and N. Abbarin** are employees of Janssen Medical Affairs, Janssen Inc, Toronto, ON, Canada, **M. Miller** and **Y. You** are employees of Janssen Research & Development, LLC, and **Y.-W. Yang** is an employee of Immunology Global Medical Affairs, Janssen Pharmaceutical Companies of Johnson & Johnson; employees may own stock/stock options in Johnson & Johnson, of which Janssen is a subsidiary.

References
1. Kimball AB, et al. *Am J Clin Dermatol.* 2005;6:383-392.
2. Blauvelt A, et al. *J Am Acad Dermatol.* 2017;76:405-417.
3. Basra MKA, et al. *Dermatology.* 2015;230:27-33.

Scan the QR code

https://www.congresshub.com/Immunology/FCDC2023/Guselkumab/Papp-Time

Presented at the 31st EADV Congress; September 7–10, 2022; Milan, Italy & Online.