CANAKINUMAB WITH OR WITHOUT CORTICOSTEROIDS REDUCED GOUT FLARES ASSOCIATED WITH PEGLOTICASE TREATMENT REGARDLESS OF THE IMMUNOMODULATOR USED: A REAL-WORLD DATABASE STUDY

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POS0938

Background

- The initiation of uric acid lowering treatment is associated with gout flares, likely as a result of remodeling of crystal deposits during dissolution.[1]
- The greater the reduction in serum uric acid, the more likely a flare will occur.
- The American College of Rheumatology guidelines recommend colchicine, nonsteroidal anti-inflammatory drugs (NSAIDs), or prednisone for prophylaxis.
- Pegloticase can dramatically reduce serum uric acid levels and despite prophylaxis with colchicine, NSAIDs, and methylprednisolone, gout flares still frequently occur.
- In MIRROR RCT, 54% of patients in the pegloticase + methotrexate treatment group experienced a gout flare the first month and 67% of patients had at least one flare over the 52-week study.[2]
- Canakinumab is FDA approved for treatment of recurrent gout flares in patients who cannot be treated with NSAIDs, colchicine, or repeated courses of corticosteroids[3] but to our knowledge has not been studied in conjunction with pegloticase treatment.

Objective

- To evaluate the effectiveness of canakinumab when treating gout flares associated with pegloticase + various immunomodulator medications (IMM) in a real-world setting.

Methods

- Using 2 private rheumatology clinics, a large de-identified database was assembled.
- Using the pegloticase infusion code (J2507) all patients that received ≥1 pegloticase infusion from January 1, 2021 thru December 9, 2023 were identified.
- Each of these patients was then analyzed for the use of ≥1 canakinumab 150 mg injection which created the study population.
- Demographics (age, gender, race), date(s) of canakinumab and pegloticase administration, IMM used, labs (serum uric acid, eGFR, liver function tests), gout flares, and outcome from pegloticase treatment were gathered.
- Data regarding the number of gout flares, the type of IMM, and the use of preinfusion corticosteroids were highlighted.

Results

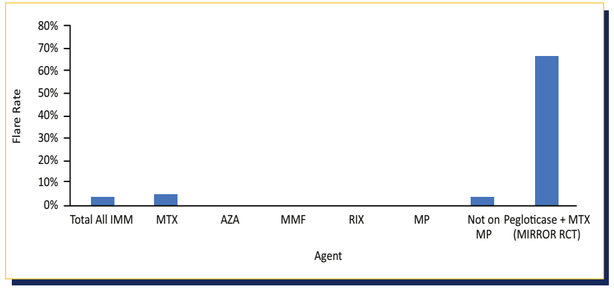
- A total of 358,328 patients were screened from the database.
- At least 1 dose of pegloticase was administered to 50 patients, 26 of these patients also received at least 1 canakinumab injection which became the study population.
- Patient ages ranged from 34-89 with estimated glomerular filtration rate range of 6-112 mL/min/1.73m^2, with one patient being on hemodialysis.
- Additional demographic and patient data are displayed in the table (**Table 1**).

Table 1. Key demographic and treatment information in patients administered canakinumab for gout flares related to pegloticase + IMM treatment

Characteristic	Response
Age (years), Range (mean)	34-89 (58)
Sex, n (%)	
Male	25 (96.2%)
Female	1 (3.8%)
Race, n (%)	
White	11 (42.3%)
Black	1 (3.8%)
Asian	2 (7.7%)
Pacific Islander	6 (23.1%)
Other/Declined	6 (23.1%)
IMM Usage, n (%)	
MTX	18 (69.2%)
AZA	1 (3.8%)
MMF	6 (23.1%)
RIX	1 (3.8%)
Canakinumab use, n (%)	
Prior to pegloticase	23 (88.5%)
After pegloticase	3 (11.5%)
Serum Uric Acid (mg/dL), Pre-Treatment Range (mean)	3.7-14.7 (9.0)
Serum Uric Acid (mg/dL), Post-Treatment Range (mean)	<1.0-3.4 (0.8)
GFR (mL/min/1.73m^2), Range (mean)	33-112 (59)
Abnormal Liver Function by IMM, n (%)	
MTX	1 (5.6%)
AZA	1 (100%)
MMF	1 (16.7%)
RIX	0 (0%)
Infections, n (%)	1 (3.8%)

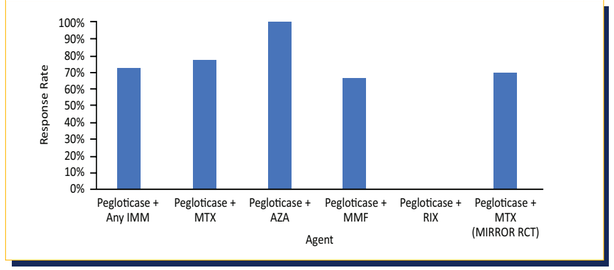
- All 26 patients had taken an IMM in combination with pegloticase (18 methotrexate, 6 mycophenolate, 1 azathioprine, and 1 rituximab).
- Three patients received canakinumab after multiple pegloticase infusions were given.
- Three patients received methylprednisolone preinfusion, with one patient discontinuing the methylprednisolone after the second infusion without flare.
- Four patients were infused with pegloticase at a 1-hour rate.
- Mild, transient elevations in liver functions were seen in 3 patients and 1 patient experienced 2 infections.
- There were 2 reported gout flares, both with methotrexate as the IMM, but only one within 3 months of the canakinumab injection, which resolved with a single colchicine and indomethacin tablet (**Figure 1**).
- Pegloticase with IMM overall response rate was 73% (19/26) with 7 patients having side effects or increased uric acid (**Figure 2**).
- Pegloticase response rate with: MTX 78% (14/18), AZA 100% (1/1), MMF 67% (4/6), and RIX 0% (0/1) (**Figure 2**).

Figure 1. Percentage of patients experiencing ≥1 acute gout flare by agent



Flare data related to MP was not affected by IMM agent used. Flares were patient reported from medical record review. Data from MIRROR RCT (active arm) provided for non-statistical comparison only.[2]

Figure 2. Percentage of patient responders by agent



Data from MIRROR RCT (active arm) provided for non-statistical comparison only.[2]

Conclusions

- Canakinumab is effective in reducing gout flares associated with pegloticase treatment with and without corticosteroids.
- The specific IMM used in combination (methotrexate, mycophenolate, azathioprine, rituximab) had no effect on the efficacy of the canakinumab treatment.
- The use of canakinumab had no effect on the response rate to pegloticase + IMM.
- These findings support the use of canakinumab without corticosteroids in all patients undergoing treatment for gout with pegloticase regardless of the IMM used.

References

1. Xin F, et al. *Int J Cllin Exp Med.* 2015;8(11):21460-21465.
2. Botson JK, et al. *Arthritis Rheumatol.* 2023;75:293-304.
3. Canakinumab PI 2023.

Acknowledgments

The Alaska Rheumatology Alliance for financial support.

Disclosure of Interest

Darion Heald: None declared, John Botson Speaker bureau: Abbvie, Amgen, and Horizon Therapeutics (now Amgen, Inc.)., Consultant: Horizon Therapeutics (now Amgen, Inc.) and Novartis., Grant/research support: Study site and principal investigator: Horizon Therapeutics (now Amgen, Inc.) and Olatec., Jeff Peterson Speaker bureau: Eli Lilly, Horizon Therapeutics (now Amgen, Inc.), and Janssen., Consultant: GlaxoSmithKline, Horizon Therapeutics (now Amgen, Inc.), Novartis, and Union Chimique Belge., Grant/research support: Study site and principal investigator Bristol Myers Squibb, Eli Lilly, GlaxoSmithKline, Horizon Therapeutics (now Amgen, Inc.), Olatec, and SetPoint Medical.

Poster presented at the European Alliance of Associations for Rheumatology, 12-15 June 2024 (Vienna, Austria).