

INTRODUCTION

- Gout is the most common form of inflammatory arthritis, affecting more than 40 million adults worldwide (1), with an estimated 3.9% prevalence in the adult US population (2).
- Gout is mostly managed outpatient by a primary care provider (PCP).
- We conducted a Quality Improvement (QI) project in our Internal Medicine Residency (IM) clinic involving increasing awareness, improving management and treatment optimization of gout patients.

METHODS

- Patients were identified with gout from January 2018 October 2022 at our Community Hospital clinic by EMR search.
- We collected data on age, sex, race, BMI, number of gout flares, number of office visits, comorbidities, recent serum uric acid levels (SUA) and current diuretic use.
- We conducted an initial survey to identify barriers in gout management among residents.
- Resident intervention phase included flyers, emails on lifestyle modification, SUA monitoring, medication titration and follow up.
- Patient interventions included patient education, follow ups via telephone calls, pamphlet (figure 1) on medication compliance, diet and alcohol use.
- At the end of a 6-month period following the active intervention, the percentage of patients who achieved lowering of SUA, reduction in gout flare-ups and change in quality-oflife will be measured (using the Health Assessment Questionnaire Disability Index, HAQDI).

QI: Gout Management In A Residency Clinic.

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RESULTS

- In the pre survey 69% residents were not familiar with the American College of Rheumatology (ACR) guidelines and almost 50% were unaware of the target SUA level.
- However majority had a good grasp on history taking, dietary restrictions and follow ups.
- 44 patients had a diagnosis of gout between January 2018 - October 2022.
- Patient demographics were as shown in table 1. The serum uric acid levels ranged from 3.4 mg/dL to 11.8 mg/dL with a mean of 6.5 mg/dL (SD 1.9). The study showed that 19.2% of the population had around 1 flare per year of acute gout and about 9.6% had about 2 flares/year. There was no statistically significant difference in demographics or comorbidities in patients with and without gout flares. Latest SUA levels had moderately strong correlation with serum creatinine, but not with number of clinic visits per year, BMI or comorbidities.

| | 21 |
|-----------------------------------|-------------------------|
| Mean Age | 60.8, SD 12.7 |
| Sex | Male 32, Female 12 |
| Race | 63 % Caucasian, 34 % AA |
| Mean BMI | 33.3 kg/m2 |
| Tophaceous gout | 9.60 % |
| Crystal proven gout | 7.70 % |
| Radiographic erosions | 13.50 % |
| Mean SUA | 6.5 mg/dl |
| Serum creatinine mean | 1.29 mg/dl |
| Flares/year, one or more per year | 28.80 % |
| Average outpatient visit/year | 3.49 |
| Compliance with medication | 72.7 |
| Hypertension | 93.2 % |
| Diabetes mellitus | 36.4 % |
| Hyperlipidemia | 65.9 % |
| СКD | 34.1 % |
| CVA | 11.40 % |
| CAD | 20.5 % |
| Alcohol use | 50 % |
| Aspirin use | 38.60 % |
| Statin use | 65.90 % |
| Diuretic use | 31.80 % |
| NSAID use | 27.30 % |
| Allopurinol use | 61.40 % |
| Colchicine use | 18.20 % |
| Steroid use | 9.10 % |
| | |

Table 1 (left): Patient demographics. Table 2 (right): Comparison of latest serum uric acid levels with comorbidities and demographics.

| Ask your PCP about gout today! | | DOTHAVE GOUT? | Rł mal many e dem |
|---|--|--|---|
| What is gout? | How is gout diagnosed? | How is gout treated? | The o |
| Gout is a very common form of joint inflammation (arthritis). The body makes uric acid when it breaks down purines, found in our body and foods we eat. | Gout is diagnosed based on combination of the following: • Symptoms • Physical exam findings | Treatment consists of preventing acute flares and treating flares when they occur. Prevention of flares is based on making lifestyle and diet changes to lower build up of uric acid levels: > Weight loss > Limiting alcohol intake > Eating less purine-rich foods like red meats | SUA g |
| When there is too high unc acid in our body, it can deposit as crystals in our joints and other tissue. This deposition can cause gout, an extremely painful, red, swollen and warm joint (frequently affecting the big toe). | XR findings | Based on your uric acid levels, you might also need maintenance treatment to keep your uric acid levels below a certain level to prevent flares (e.g. Allopurinol). Acute flares are treated with anti- inflammatory drugs (e.g. NSAIDs, steroids and Colchicine). <u>Your doctor can discuss what the best</u> <u>options are for you.</u> | 1. Danve A 2021;35 2. Li Q, La systema |

Figure 1: Patient education flyer.



| Latest SUA levels | N | rho | P- value |
|-------------------|----|--------------|----------|
| Serum creatinine | 43 | 0.31 | 0.04 |
| Outpatient visits | 42 | -0.16 | 0.29 |
| BMI | 43 | 0.04 | 0.75 |
| | | Mean with SD | P-value |
| Hypertension | 40 | 6.6+/- 1.9 | 0.42 |
| Diabetes | 16 | 7.4+/- 2.4 | 0.06 |
| СКО | 15 | 6.6+/-2.5 | 0.82 |
| CVA | 5 | 7.5+/- 2.2 | 0.27 |
| CAD | 9 | 7.2+/- 2.8 | 0.63 |
| Alcohol use | 22 | 6.8+/- 1.6 | 0.13 |
| Diuretic use | 14 | 6.3+/- 2.6 | 0.25 |
| Allopurinol use | 26 | 6.7+/- 2.2 | 0.58 |

CONCLUSION

neumatology access continues to be limited in the US and king a PCP comfortable with managing gout can help us in ways. We found a knowledge deficit in our resident group, specially with medical management. Comorbidities and ographics in our study group did not predict flares in gout. outcome measures of improvement in flares and reduction in at the end of study period and resurveying the residents will give us further idea regarding the success of this project.

REFERENCES

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