Elegant Approach to Gout

New thoughts on a 2000 year old disease

Gerald Levy MD MBA
August 3, 2012

Disclosure:
Current research funded by:
Kaiser Research & Education
Savient Pharmaceuticals
Application pending with the NIH

Objectives:
How to Diagnosis Gout
Treatment for Acute Gout
When to use prophylactic medications
Treatment of Chronic Gout
Utilize the new Treat to Target guidelines
When to call for help
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Case #1
Mr. A.F, 40 year old Samoan male with chief complaint of recurrent pain and swelling in his great toe. He has had problems on and off for several years but has never been treated.

His most recent attack woke him at 3 in the morning and by dawn he was unable to walk.

Typically his ‘attacks’ get better in a few days, especially if he takes ibuprofen

ARS #1:
What are the appropriate next steps? (select all that apply)

1. CBC
2. Creatinine
3. glucose
4. Uric acid
5. Aspiration of joint
6. Xray
7. MRI
8. Take medication/diet history

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Case #1 Mr. A.F, 40 year old Samoan male, labs

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
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<tbody>
<tr>
<td>WBC</td>
<td>9.7</td>
</tr>
<tr>
<td>Hg</td>
<td>11.3</td>
</tr>
<tr>
<td>PR</td>
<td>265</td>
</tr>
<tr>
<td>Cr</td>
<td>0.9</td>
</tr>
<tr>
<td>Glu</td>
<td>243</td>
</tr>
<tr>
<td>sUA</td>
<td>11.4</td>
</tr>
</tbody>
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Aspiration

Xray

Normal foot

Gout in toe
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Diagnostic Criteria

1977 Criteria for the Classification of Acute Arthritis of Primary Gout
The combination of crystals, tophi, and/or 6 or more criteria are highly suggestive of gout
1. More than one attack of acute arthritis
2. Maximum inflammation developed within 1 day
3. Monoarticular attack
4. Redness observed over joints
5. First metatarsophalangeal joint painful or swollen
6. Unilateral first metatarsophalangeal joint attack
7. Unilateral tarsal joint attack
8. Tophus (proven or suspected)
9. Hyperuricemia
10. Asymmetric swelling within a joint on X ray
11. Subarticular cysts without erosions on X ray
12. Monosodium urate monohydrate microcrystals in joint fluid during attack
13. Joint fluid culture negative for organisms during attack

Rome criteria
Patients must meet 2 of the following 4 criteria:
1. an SU level >7 mg/dL in men or >6 mg/dL in women
2. the presence of tophi
3. the presence of MSU crystals in SF or tissues
4. a history of painful joint swelling with abrupt onset and remission within 2 weeks.

New York criteria
Monosodium urate crystals in synovial fluid or tissue (tophi) OR
Patients must meet 2 of the following 4 criteria:
1. Presence of a clear history of at least 2 attacks of painful joint swelling with complete resolution within 2 weeks
2. a clear history or observation of podagra
3. the presence of a tophus
4. a rapid response to colchicine

What do you need to make a diagnosis of gout?

EULAR evidence:

- Typical attack [rapid onset, max intensity in 6-12 hours] 1.7
- Podagra 30.6
- Tophus 39.95
- MSU during acute attack 566
- MSU inter-critical period 15
- sUA >7 m, >6 f 7.6

Note: region of the world can give ‘clues’ to the diagnosis
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Gout basics:
- Men > women, until after menopause
- ~1% of US population
- Incidence increases with age
- Has been increasing over time
  - [increased use of diuretics, metabolic syndrome, obesity]
- Diagnosis may be obvious but must rule out other causes of joint pain
  - Role of lab:
    - sUAC
    - CBC
    - Creatinine
    - Glucose
    - Joint fluid

ARS #2

All acute crystal induced joint pains are due to MonoSodiumUrate.
1. True
2. False

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Acute crystal induced joint pain can be due to MSU or CPPD.

False. Calcium pyrophosphate deposition disease (CPPD) can mimic gout and is often called PSEUDOGOUT.

Increases with age, w/m, ubiquitous,
associated with: OA, hemochromatosis, hyperPTH, hyperPhos, hypoMag
Can affect any joint, knees>wrist>shoulder>ankle>elbow
Self limited, can use colchicine, NSAIDs, analgesics
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ARS #3: When to start Urate lowering therapy [ULT]

1. Start ULT during acute attack / at presentation?
2. Wait to start ULT until after the attack subsides?

Urate lowering therapy [ULT]

Start ULT during acute attack

Small RCT shows no difference in flare rate when initiating allopurinol vs placebo during acute attack.

Patients often benefit from prophylaxis.

Urate lowering therapy: how to prescribe

Allopurinol: Start low, go slow, but don’t stop until TARGET is reached*

Start 100mg allopurinol x 2 weeks, then 200mg x 2 weeks, recheck sUA at 6 – 8 weeks. If <6 cont therapy. If >6 increase by 100mg up to 800mg

Renal limits for allopurinol, less effective, more side effects Cr ≥2.5.

*NNT = 2
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Urate lowering therapy: how to prescribe
If unable to take allopurinol can use Probenecid 250 BID up to 2 g/ day
Should not use Probenecid if Cr >2.0
Allopurinol can be combined with probenicid [cautiously]
New kid: Fubuxostat [Uloric] 40mg/day up to 80mg/per day
can use for ckd stage I – III (gfr 30- 89)

Difficult case? You can ALWAYS refer to Rheumatology

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ARS #4:
Patient has a gout flare on ULT
Do you
1. Continue ULT during acute attack?
2. Stop ULT until after the attack subsides?

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Patient has a gout flare on ULT
Absolutely continue ULT during acute attack
Compliance issues
Chronic flare patients are inadequately treated due to time off drug
Data suggests that stopping ULT and then restarting causes
“Mobilization flares”
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ARS #5:
What is the Treat to Target GOAL for sUA?
1. < 8 mg/dl
2. < 6.8 mg/dl
3. < 6 mg/dl
4. < 5 mg/dl

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What is the Treat to Target GOAL for sUA?
Well, it depends
1. < 8 mg/dl
2. < 6.8 mg/dl – solubility of sUA……
3. < 6 mg/dl – 'normal gout patients'
4. < 5 mg/dl – 'tophaceous gout'

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ARS #6:
How to use colchicine
1. I never use it, too dangerous
2. Colchicine 0.6mg: 1 q hour x 6, till relief or diarrhea
3. Colchicine 0.6mg: 2 immediately followed by 1 an hour later
4. Some other regimen
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Colchicine
First used for GOUT 6th Century by Alexander of Tralles. “lost” until 1763 when it was rediscovered by Baron Von Toerk
At least 3 studies showed colchicine worked before the COLCRYS era
FDA ‘mandated’ study Changed Management
In 2009
We must balance:
Need v. Side Effects
While considering $$$

ARS #7:
How to treat acute gout attack?
1. Indomethocin 25mg BID - TID
2. Indomethocin 75mg BID
3. Other NSAIDs work as well
4. Use prednisone instead

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Treatment of acute flares
Colchicine 0.6mg: 2 at onset, then 1 an hour later, followed by 1 q 12hr to 3d
NSAID ‘full dose’
Actaminophen can use for pain
Steroids 10-20 mg per day
Combination of above
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**ARS #8**
What to use for prophylaxis to prevent gout attacks
1. Colchicine 1-2 per day
2. NSAIDS: ‘half dose’
3. Steroids: 10-20mg per day

**Prophylaxis to prevent gout attacks**
Evidence says colchicine, NSAIDS or steroids can ALL be used depending on individual patient issues based on ‘non-inferiority’ studies.

Some considerations
- Renal Function
- GI tract issues
- Diabetes?
- Hypertension
- Duration of therapy (including TF discussion)
- Topical ice, cherry juice, ‘various nutraceuticals’

**ARS #9**
Beer, Wine and hard liquor are equally likely to cause acute gout?
1. True
2. False
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**Beer = Wine = hard liquor?**

Risk of gout is related to number of drinks and KIND of drink:

- Study of 47K men over 4 years:
  - 1 drink:
    - Beer RR 1.45
    - hard liquor RR 1.15
    - wine RR 1.04

- Risk goes up with the number of drinks in 2 day period.

- Sodas with fructose (NHANES):
  - RR 1.85 with 2 or more soft drinks/day

- Organ meats

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**ARS #10**

Patient has what appears to be gout but the sUA is normal. Can this patient have gout?

1. Yes
2. No

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Can uric acid be normal during an acute attack?

- YES. Can be to 48% at time of attack.
- Acts as a reverse acute phase reactant
- Renal excretion goes UP during attack
- Patient behavior changes during attack e.g. beer consumption!
Case #2 Mrs. X. S. is a 60 yo female with a 6 year hx of gout. She continues to have gout attacks every couple of months that interfere with her work. She is now requesting an FMLA form so she ‘doesn’t lose my job’. She Smokes ½ ppd, drinks beer on the weekends, does not exercise regularly.

P.E. BP is 138/90, pulse 82, rr 20. BMI = 34
Joints are cool

Current medications: Simvistatin, maxide, allopurinol 100mg
Glipizide, metformin, metoprolol and meloxicam.

Current labs:
- CBC normal
- Cr 1.7
- glu (frf) 160
- HgA1c 7.4

Medication and Food Effects

- Loop/Thiazide diuretics
- Niacin
- LOW DOSE aspirin
- Drugs that impair renal function

- Red Meat
- Seafood
- Dehydration
- Weight Gain

Compliance
Patient understanding of process/therapy

Untreated gout can go from episodic to chronic with development of joint destruction and tophi
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ARS #11

Patient with Tophaceous Gout should [select all that apply]

1. Treat to Target goal of 6.8
2. Treat to Target goal of 6
3. Treat to Target goal of 5
4. Address Lifestyle issues
5. Refer to rheumatology
6. Refer to another health plan

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Rheumatological Pearls [things you thought you knew, but maybe not]

Q. Do I have to wait for acute attack to subside before starting ULT?
A. NO, evidence suggests that flares are not worsened when starting right away.

Q. What about stopping ULT during a flare?
A. NO, Therapy should be continued. In fact, resuming after the flare resolves may prompt another acute "mobilization" gout attack.

Q. Is indomethacin the best NSAID to treat gout flares?
A. All NSAIDs are roughly equivalent in their effectiveness.

Q. Should colchicine be dosed every hour up to six hours?
A. Absolutely NOT. "Low Dose" colchicine as described above is just as effective with significantly fewer unpleasant side effects.

Many 'goutologists' recommend using colchicine as a 'pocket drug' [think NTG].

Q. Allopurinol should be dosed at 300mg/day.
A. Start 100mg/day, increase by 100mg every 2 weeks to 300mg. Reck lab to see if patient is at TARGET GOAL. Increase every 3 months by 100, check lab. Continue to loop until patient is at GOAL or 800mg is reached. [Follow Cr too]

Q. What about the 'new' drug my patients are asking about after seeing it on TV?
A. Febuxostat [Uloric] is a new xanthine oxidase inhibitor used when conventional therapy has failed (often in the setting of CKD stage 3).

Contact your local rheumatologist if you think your patient needs this NF drug.

Q. Alcohol should be avoided completely.
A. Alcohol shows a dose response more drinks = increased risk of gout attack.

Q. Can my patients ever eat steak or seafood again?
A. Yes, in moderation, especially after the disease is controlled.

Q. Doesn't gout condemn patient to a lifetime of joint pain?
A. No, with proper therapy patients should be pain free within a year.

Q. Isn't gout a Primary Care Provider Disease? Rheumatologists don't need to see these patients.
A. Rheumatology should be involved in complicated cases, patients with renal insufficiency, tophaceous gout, and of course when the standard therapies are not working.
Summary:
Consider GOUT in appropriate cases

Use TREAT TO TARGET serum Uric Acid as a guide to therapy
- < 6mg/dl for non-tophaceous gout
- < 5mg/dl for tophaceous gout

START ULT in appropriate patients regardless of disease activity

Consider prophylaxis when initiating ULT

DO NOT stop ULT when patient has a gout flare, instead treat flare!

Refer to rheumatology when needed [low barrier!]

GOAL: eliminate ALL acute gout attacks!

References:
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