Oral Prednisolone in the Treatment of Acute Gout

BACKGROUND:
- Currently, three conflicting guidelines exist for the treatment of acute gout.
- The use of prednisolone for the treatment of acute gout has been previously studied but only in two small randomized controlled trials.

OBJECTIVE:
- To assess the efficacy and safety of prednisolone versus indomethacin for the treatment of acute gout.

METHODS
- **Design**: Randomized, parallel, double blind, double-dummy, placebo-controlled trial.
- **Duration of study**: 14 days
- **Inclusion criteria**: At least 18 years old, presented to the emergency department (ED) within 3 days of symptom onset, considered to have gout by a specialist emergency physician, and have the following two criteria: rapid onset of severe pain, swelling, tenderness, and erythema of an affected joint AND at least one of the following, metatarsophalangeal (MTP) joint involvement OR knee/ankle/wrist/elbow involvement with gouty tophi, previous joint aspiration confirming gout, hyperuricemia, or clinical history of 1 or more clinical gouty arthritis attacks.
- **Exclusion criteria**: Received corticosteroids or indomethacin within the past 24 hours, history of bleeding disorders/anticoagulation use, allergic to study drug, septic arthritis, rheumatoid arthritis, no MSU crystals on joint aspiration, unstable cardiac conditions, significant comorbidities, SCr > 2.26 mg/dL or GFR < 30 mL/min.
- **Primary outcome measures**: Analgesic effectiveness using a visual analog scale (VAS) 0-100 mm
- **Secondary outcomes measures**: Presence or absence of adverse events
- **Data handling method** was intent-to-treat and per-protocol.

RESULTS
- **Primary outcome measure**: No significant difference was detected in the mean pain reduction during the first 2 hours in the ED at rest (-1.15 (95% CI 0.83 to – 3.14) p = 0.79) or with activity (0.10 (95% CI 2.10 to -1.91) p = 0.52). No significant difference was detected in the mean pain reduction during days 1-14 at rest (-0.15 (95% CI 0.26 to -0.56) p = 0.92) or with activity (0.12 (95% CI 0.58 -0.35) p = 0.15). A significant
difference was detected in the mean pain reduction between groups during days 1-5 (-1.30 (95% CI -0.38 to -2.22)) but a P value was not reported.

• **Secondary outcome measure:** A statistically significant difference was observed in the first 2 hours of the ED in: one or more adverse events occurred in 39 patients receiving indomethacin and 13 of those receiving prednisolone (p < 0.001), dizziness was reported in 19 patients receiving indomethacin and in 0 patients receiving prednisolone (p < 0.001), sleepiness was reported in 15 patients receiving indomethacin and 3 patients receiving prednisolone (p = 0.004), and nausea was reported in 7 patients receiving indomethacin and 0 patients receiving prednisolone (p = 0.015). A statistically significant difference was also observed in days 1-14 for the following: nausea was reported in 15 patients receiving indomethacin and 4 patients receiving prednisolone (p = 0.009), vomiting was reported in 10 patients receiving indomethacin and 1 patient receiving prednisolone (p =0.006), and a skin rash was reported in 2 patients receiving indomethacin and in 11 patients receiving prednisolone (p=0.011).

• **Authors’ conclusion:** Oral corticosteroids are as effective at treating pain and as acceptable to patients as NSAIDs and hey should be considered as a first line alternative to NSAIDs in the treatment of patients with acute gout.

**STRENGTHS**
- Randomized, multi-center, placebo-controlled trial design
- Compared study drugs at appropriate dose for the treatment of acute gout
- Adherence was assessed

**LIMITATIONS**
- Patients were only recruited at EDs from 9 am – 4 pm thus limiting potential candidates
- Indomethacin was the NSAID of choice and may not be able to extrapolate these findings to other NSAIDs
- Cost effectiveness was not assessed
- Paracetamol 1 g every 6 hours as needed was prescribed for both groups
- Baseline at rest pain ratings were low
- Over the counter NSAID use was not accounted for or limited in the study design
- Patients were not instructed on various measures on how to counteract typical GI side effects of the study drugs, such as taking the medication with food.

**CONCLUSIONS**
- Overall, this study does support the use of prednisone as a viable option for the treatment of acute gout due to its pain resolution and relatively low side effects.
- Future research:
  - Since short course steroids has been said to cause recurrent acute gout flare ups, further evaluations of 5 day courses of steroids cause a statistically significant difference in recurrent gout flare ups compared to NSAIDs.


Catessa Howard, PharmD Candidate
9/29/2016