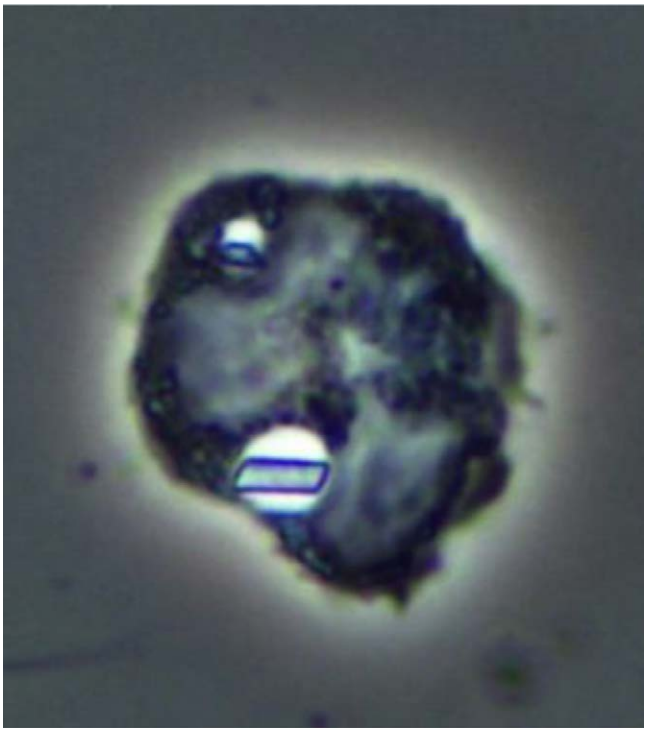

Image 2. Microscopy with phase contrast technique. Cells with intracellular vacuoles are observed inside which have microcrystals with parallelepiped morphology, compatible with CPP.

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THU0407 THE VALUE OF SONOGRAPHY IN THE INTERCRITICAL PHASE OF GOUT

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Background: Disease remission is the goal of therapy for many chronic rheumatic diseases. In 2016, provisional gout remission criteria were proposed (1). To the best of our knowledge, no studies have compared ultrasound (US) findings in gouty patients with and without remission.
Objectives: To determine the prevalence of US pathologic findings in patients with gout fulfilling and not fulfilling the provisional remission criteria and to investigate the value of the US findings as predictors of a gouty flare within 6 months.
Methods: Patients with a diagnosis of gout according to the 2015 classification criteria (2) were recruited in this prospective, monocentric study. The following clinical information was recorded at baseline and after 6 months: number of gouty flares in the preceding 6 months, number of subcutaneous tophi, current serum urate level, and patient reported outcomes (pain visual analogue scale and patient global assessment visual analogue scale). Bilateral US assessment of the following anatomical areas was performed (3): elbow, wrist, II metacarpophalangeal joint, knee, ankle and I metatarsophalangeal joint. US evidence of tophi, aggregates, double contour sign and synovitis were recorded according to the correspondent OMERACT definitions.
Results: Forty-nine patients with gout were consecutively enrolled. The remission criteria were satisfied in 9 (18.4%) patients. Monosodium urate (MSU) deposits and findings of synovitis were observed by US less frequently in patients in remission (55.6% and 22.2%), compared with those not fulfilling the criteria (100.0% and 72.5%) (p values<0.01). The US MSU total score was 1.0; 0.0–2.0 (median and inter-quartile range) for patients in remission, compared with 6.0; 5.0–7.0 for those not fulfilling the criteria (p<0.01). US synovitis total score was significantly correlated with patient global assessment (R=0.55, p<0.01), patient pain (R=0.51, p<0.01) and number of gouty attacks in the previous 6 months (R=0.36, p=0.03), whereas MSU total score was associated with the number of gouty attacks in the previous 6 months (R=0.49, p<0.01), the number of subcutaneous tophi (R=0.45, p<0.01), patient pain (R=0.41, p=0.01), patient global assessment (R=0.41, p<0.01). At logistic regression analysis, the presence of subcutaneous tophi (OR=2.8, p=0.02), CRP level (OR=6.5, p=0.04) and US synovitis score (OR=2.0, p=0.04) and were predictors of subsequent development of gouty flare within 6 months.
Conclusion: This study provides new insights into the inter-critical phase of gout, highlighting the clinical relevance of US synovitis as a predictor of subsequent development of gouty flare and joint pain. Despite MSU deposits are still detectable in patients satisfying the 2016 provisional remission criteria for gout, the remission is associated with less US detected MSU deposits.
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Disclosure of Interests: : Edoardo Cipolletta: None declared, Andrea Di Matteo Grant/research support from: the publication was conducted while Dr. Di Matteo was an ARTICULUM fellow, Giada Brunori: None declared, Antonella Moretti: None declared, Walter Grassi Speakers bureau: Prof. Grassi reports personal fees from AbbVie, personal fees from Celgene, personal fees from Grünenthal, personal fees from Pfizer, personal fees from Union Chimique Belge Pharma, outside the submitted work., Emilio Filippucci Speakers bureau: Dr. Filippucci reports personal fees from AbbVie, personal fees from Bristol-Myers Squibb, personal fees from Celgene, personal fees from Roche, personal fees from Union Chimique Belge Pharma, personal fees from Pfizer, outside the submitted work.
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THU0408 EFFECT OF NEW-ONSET GOUT ON KIDNEY TRANSPLANT OUTCOMES: A RETROSPECTIVE COHORT ANALYSIS OF THE UNITED STATES RENAL DATA SYSTEM

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Background: Gout is a frequent comorbidity in kidney transplant (KT) recipients. However, assessing the independent effect of gout on KT outcomes is difficult because of multiple confounders (e.g., temporal changes in estimated glomerular filtration rate [eGFR], cyclosporine or tacrolimus dose, urate-lowering medication use) that obscure a clear picture of gout's potential impact.
Objectives: This investigation assessed if the development of new-onset gout after KT was an independent risk factor for loss of graft function, as assessed by the need for maintenance hemodialysis following KT.
Methods: This retrospective cohort study analyzed data on patients in the United States Renal Data System (USRDS) who received a primary KT between 1/1/2008 and 12/31/2015. The date of transplantation was the 'index' date. Eligible patients were required to have ≥24 months of Medicare coverage and no prior history of gout, defined as ≥1 claim with a gout diagnosis code in the 24 months prior to the index date. All patients were also required to have ≥12 months of coverage post index. Patients who died, experienced graft failure, or returned to dialysis <12 months post index were excluded. Because the first year following transplant is associated with the highest frequency of rejections, we evaluated subjects beginning 1 year after transplant. The exposure of interest was new-onset gout, defined as the presence of ≥2 claims for gout post index, and the primary endpoint was return to dialysis >12 months post index. Baseline time-invariant confounders included recipient and donor demographics and clinical characteristics at index. Time-varying confounders included body mass index (BMI) adjusted tacrolimus and cyclosporine dose, eGFR, and urate-lowering medication use post index. Patients who died or lost Medicare coverage >12 months post index were censored; all patients remaining at the end of the study period (12/31/2016) were also censored. A marginal structural model (MSM) was fitted to determine the relative risk of new-onset gout on return to dialysis, while controlling for both time-invariant and time-varying confounders.
Results: 18,525 of 466,589 KT recipients in the USRDS met study eligibility. Within the observation period, 1,399 (7.6%) developed new-onset gout and 1,420 (7.7%) returned to dialysis >12 months post index. Median time from index to new-onset gout and from index to return to dialysis was 16.2 months (IQR: 33.4) and 32.8 months (IQR: 28.4), respectively. Adjusting for baseline time-invariant and time-varying confounders via the MSM showed new-onset gout was associated with a 51% increased risk of return to dialysis >12 months post index (RR: 1.51, 95% CI: 1.03, 2.20).

Conclusion: New-onset gout was independently associated with a 51% increased risk of return to dialysis >12 months after primary KT compared to a control cohort without gout. To our knowledge, this is the first observation of this outcome in an appropriately controlled cohort study of KT recipients with gout. Results from this analysis may have important implications for the monitoring and management of new-onset gout in the kidney transplant population.

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THU0409 A RANDOMIZED, PHASE 2 STUDY EVALUATING THE EFFICACY AND SAFETY OF ANAKINRA IN DIFFICULT-TO-TREAT ACUTE GOUTY ARTHRITIS: THE ANAGO STUDY

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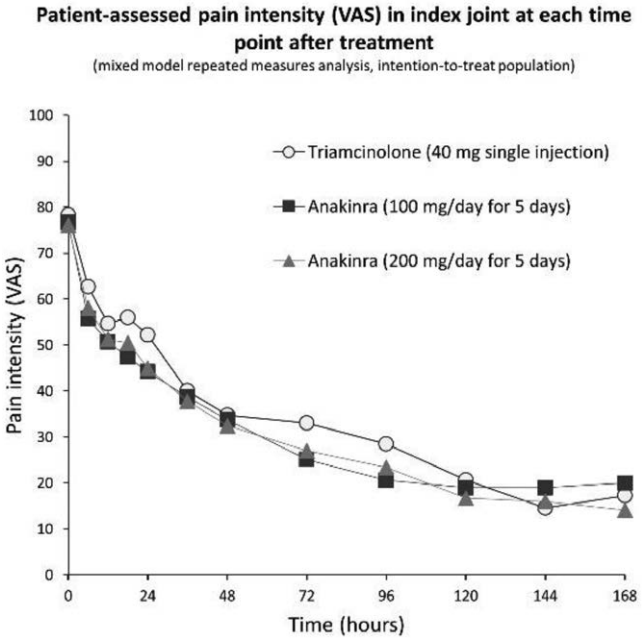
Background: In gout, urate crystals deposited in and around joints trigger episodes of acute arthritis, mediated by the proinflammatory cytokine IL-1β. In uncontrolled studies, the IL-1 receptor antagonist anakinra appears effective in reducing pain and signs of acute flares in patients with difficult-to-treat gout. However, confirmatory, adequately-powered, prospective trials are lacking. The 'anaGO-study' (anakinra in gout) was a multi-center, randomized, double-blind, double-dummy, phase 2 study investigating the efficacy and safety of anakinra in acute gout (NCT03002974).

Objectives: The primary objective was to evaluate the efficacy of two regimens of anakinra (100 or 200 mg daily s.c. injections for 5 days) compared to triamcinolone (single i.m. injection 40 mg) with respect to patient-assessed pain intensity. The primary endpoint was change in pain intensity from baseline to 24-72 hours (average of 24, 48 and 72 hours) in the most affected joint measured on a visual analogue scale (0-100 VAS). Secondary outcomes included: time to onset of effect, time to response, time to pain resolution, time to rescue medication use, patient's and physician's assessments of global response, clinical signs, inflammatory biomarkers and safety.

Methods: Patients were recruited who had acute gout based on ACR/EULAR 2015 gout classification criteria, and were unsuitable for anti-inflammatory therapy with NSAIDs and colchicine due to contraindication, intolerance or inefficacy. Patients were randomized to each group in a 1:1:1 ratio and stratified by urate-lowering therapy use (yes/no) and BMI (<30.0 or ≥30.0 kg/m^2).

Results: 165 patients were randomized; 110 to anakinra (56 to 100 mg/day, 54 to 200 mg/day) and 55 to triamcinolone; 108 and 53 were included in the primary analysis, respectively. The median (range) age was 55 (25-83) years, 87% were male, mean disease duration was 8.7 years and mean number of self-reported flares during the past year was 4.5. The pain intensity, from baseline to 24-72 hours, decreased in both treatment groups; mean (95% CI) change was -39.4 (-46.8, -32.0) for triamcinolone and -41.2 (-46.3, -36.2) for anakinra. The 100 mg and 200 mg doses of anakinra were comparably effective in decreasing pain (100 mg/day: -41.8 [-48.9, -34.8] and 200 mg/day: -40.7 [-47.9, -33.4]). Mean (95% CI) difference in pain reduction between anakinra and triamcinolone treatment groups was -1.8 (-10.8, 7.1) (p-value = 0.688 for primary endpoint). The majority of secondary efficacy endpoints were numerically in favor of anakinra, and in most instances also statistically significant, in comparison to triamcinolone, e.g. physician's assessment of clinical signs at 72 hours and patient's and physician's assessment of global response at Day 8. No unexpected safety findings were identified in any of the treatment groups.

Conclusion: Anakinra and triamcinolone reduced patient-assessed gout flare pain to similar degrees in patients for whom conventional therapy was ineffective or contraindicated. Both doses of anakinra showed comparable efficacy in pain reduction. The majority of secondary efficacy endpoints favored anakinra. Anakinra was shown to be an additional option for use during acute gout flares.



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THU0410 COMPANION IMMUNOSUPPRESSION WITH AZATHIOPRINE INCREASES THE FREQUENCY OF PERSISTENT RESPONSIVENESS TO PEGLOTICASE IN PATIENTS WITH CHRONIC REFRACTORY GOUT

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Background: Pegloticase is a mammalian recombinant uricase coupled to monomethoxy polyethylene glycol that is approved in the US for treatment of patients with chronic refractory gout and causes profound reductions in serum urate. However, treatment with pegloticase is limited by the induction of anti-drug antibodies and loss of responsiveness in nearly half of treated patients.

Objectives: The goal of this study was to determine whether co-therapy with azathioprine (AZA) would increase the frequency of chronic refractory gout patients who had persistent urate lowering from pegloticase therapy.

Methods: This open label multicenter study enrolled subjects with chronic gout who failed to lower serum urate to <6 mg/dL despite medically indicated doses of urate lowering therapy (NCT02598596). Patients were screened for adequate levels of the AZA metabolizing enzyme thiopurine methyl transferase and then started on daily oral AZA 1.25 mg/kg for 1 week and then 2.5 mg/kg for