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OP0049

FACTORS ASSOCIATED WITH EARLY FLARES WHEN INITIATING URATE LOWERING THERAPIES. POST HOC ANALYSIS OF CLEAR 1,2 AND CRYSTAL TRIALS

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Background: Initiation of urate lowering therapies (ULT) in patients with gout can trigger flares which could contribute to poor treatment adherence. The EULAR guidelines recommend a prophylactic treatment with colchicine or low dose NSAIDs for up to 6 months. However, long term treatment with either NSAIDs or colchicine can be poorly tolerated or contra-indicated. Thus, identification of risk factors for flares to identify patients who would benefit more from a prophylactic treatment could improve patients care.

Objectives: To investigate the influence of patient and treatment related factors on the occurrence of flares 1 month after the initiation of ULT.

Methods: Data are from n=1018 patients (mean age 52.0 (SD 11.1) years; 95.2% male) not responding to allopurinol or febuxostat monotherapy and who received lesinurad (200 mg or 400 mg) in the CLEAR and CRYSTAL trials. Patients were prescribed colchicine (84%) or NSAIDs (12.9%) as prophylactic treatment. Data from 3 trials were pooled and the following covariates were considered in the main analysis using a Generalized Estimation Equation (GEE) model: age, gender, serum uric acid (SUA) levels, baseline body mass index, renal function, and presence of tophus, type of gout flare prophylaxis, triglycerides, comorbidities (smoking, tobacco, diabetes, hypertension, hyperlipidemia) antihypertensive and lipid lowering medications at baseline and newly started and change in SUA levels. A multivariate analysis was conducted using the occurrence of flares as response measured from baseline until month 1

Results: In the multivariate analysis, tophus at baseline and gender (female) were both associated with an increased risk of early flares: OR=2.7 (95% CI: 1.7-4.2) and OR=1.8 (95% CI: 1.0-3.4), respectively, whereas hyperlipidemia and hypertension were associated with a decreased risk of flares: OR=0.64 (95% CI: 0.45-0.91) and OR= 0.62 (95% CI: 0.39-0.99). There was a trend toward a reduced risk of flares with colchicine versus NSAIDs: OR=0.71 (95% CI: 0.47-1.05). Neither the duration of gout nor the change in SUA levels modified the risk of flares.

Conclusion: This analysis shows that gender (female) and tophus are independent risk factors of early flares when initiating ULT, and suggests that colchicine might be more effective than low dose NSAIDs as prophylactic treatment.

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OP0050

ADDITIVE VALUE AND DIAGNOSTIC ACCURACY OF DUAL-ENERGY CT FOR THE DIAGNOSIS OF GOUT: A PROSPECTIVE STUDY IN SUBJECTS WITH UNCLASSIFIED MONO OR OLIGOARTHRITIS

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Background: The latest diagnostic technique to visualize monosodium uric acid (MSU) depositions is Dual Energy CT scan (DECT).¹

Objectives: To assess the additive value and accuracy of DECT in diagnosing gout in a prospective study in subjects with unclassified arthritis.

Methods: We included 100 consecutive patients with acute unclassified mono or oligo arthritis who presented to the outpatient clinic of the Department of Rheumatology of Meander Medical Centre, Amersfoort, the Netherlands, ClinicalTrials.

gov NCT03038386. Eleven patients dropped out, see Figure. Patients underwent aspiration of the arthritic joint (see Table) and a DECT scan of hands and wrists, knees, ankles and feet bilaterally. The 2015 EULAR/ACR gout classification criteria were used to score the subjects, with and without DECT result, to determine the additive value of DECT. Sensitivity and specificity of DECT for diagnosing gout were calculated separately for at the joint and at individual persons' level, using as reference standards microscopy of synovial fluid (SF) and the gout classification criteria.

Results: For demographic and clinical characteristics of the patients see Table 1, and for study data and outcomes see Figure and Table 2. Sixty-eight of 89 patients (76.4%) fulfilled the 2015 EULAR/ACR criteria for gout. Of the 98 patients with SF aspiration, 55 (56%) were positive for MSU; of these, 89 subjects underwent DECT, of whom 38 had a negative microscopy result. Of these 38 subjects, 14 (37%) met the gout classification criteria only after a positive DECT result.

Conclusion: Our findings suggested that DECT could have an additive value to clinical algorithms in subjects with undifferentiated arthritis when microscopy of SF fails to demonstrate the presence of MSU crystals.

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Table 1. The characteristics of the patients (n=89) in the analysis

	Patients MSU positive (n=51)	Patients MSU negative (n=38)
Age, years, mean (SD)	60 (16)	64 (12)
Gender, N (%)		
Male	44 (86.3)	38 (73.7)
Arthritic joint aspirated (N,%)		
MTP1	32 (66.7)	8 (21.1)
Other joints	19 (33.3)	31 (78.9)
Period between 1 st arthritis attack and baseline visit in months, median (IQR)*	12 (0.9-48)	5.5 (0.2-36)
Serum uric acid (μmol/L) mean (SD)	499 (88)	411 (101)

* according to patient

Table 2. Diagnostic accuracy of DECT

DECT evaluation method	Reference standard	TP	FP	FN	TN	Sensitivity (95%CI)	Specificity (95% CI)	Diagnostic accuracy (95%CI)
joint/localisation based patient based	MSU	28	13	23	25	0.55 (0.40- 0.69)	0.66 (0.49 - 0.80)	0.60 (0.49- 0.70)
joint/localisation based patient based	MSU	39	20	12	18	0.77 (0.63- 0.87)	0.47 (0.31- 0.64)	0.64 (0.53- 0.74)
joint/localisation based patient based	EULAR/ACR 2015	41	0	27	21	0.60 (0.48- 0.72)	1 (0.84- 1)	0.70 (0.59 - 0.79)
joint/localisation based patient based	EULAR/ACR 2015	56	3	12	18	0.82 (0.71- 0.91)	0.86 (0.64- 0.97)	0.83 (0.74- 0.90)
joint/localisation based patient based	MSU	11	7	9	12	0.55 (0.32- 0.76)	0.63 (0.38- 0.84)	0.59 (0.42- 0.74)
joint/localisation based patient based	MSU	16	10	4	9	0.80 (0.56- 0.94)	0.47 (0.24- 0.70)	0.64 (0.46- 0.78)
joint/localisation based patient based	EULAR/ACR 2015	18	0	11	10	0.60 (0.42- 0.79)	1 (0.69- 1)	0.72 (0.55- 0.85)
joint/localisation based patient based	EULAR/ACR 2015	25	1	4	9	0.86 (0.68- 0.96)	0.90 (0.56- 0.99)	0.87 (0.73- 0.96)

joint/localisation-based evaluation, person based evaluation: imaging results positive for gout if green pixilation were observed at the index joint, at the index joint and/or in other locations, respectively.