the two groups are as follows: (1) 6 pairs of normal cholesterol group and elevated group were screened according to age, course and uric acid level. There is significant difference in the frequency of gout attacks between the two groups within six months and one year (1.17 ± 0.75 vs 2.83 ± 2.23 , $Z = -2.060$, $P = 0.039$; 1.33 ± 0.82 vs 4.17 ± 3.43 , $Z = -2.032$, $P = 0.042$). (2) 11 pairs of normal triglyceride group and elevated group were screened as above. There is significant difference in the frequency of gout attacks between the two groups within one year (1.45 ± 0.82 vs 3.45 ± 2.58 ; $Z = -2.328$, $P = 0.020$).

Conclusion: Cholesterol and triglyceride levels can affect the frequency of gout attacks. The phenomenon mentioned in background can be explained by the increase of cholesterol and triglyceride levels as the course prolongs.

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SAT0450 SENSITIVITY OF DUAL-ENERGY CT SCANNING, ULTRASOUND, AND X-RAY FOR CRYSTAL-PROVEN PSEUDOGOUT

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Background: Advanced imaging modalities such as ultrasound (US) and dual-energy CT (DECT) can help diagnose crystalline arthritis. DECT is highly sensitive and specific in gout and has not been well studied in pseudogout.

Objectives: To compare the sensitivity of DECT, US, and x-ray (XR) in pseudogout.

Methods: We prospectively enrolled patients with crystal-proven pseudogout at a tertiary care center, 3/2018-11/2018. We searched the electronic medical record for synovial fluid crystal lab orders and reviewed the record to identify candidates. Eligible patients were 18 years old with acute monoarthritis, joint aspiration, and synovial fluid calcium pyrophosphate (CPP) crystals on polarized microscopy. Patients with both monosodium urate and CPP crystals were excluded. Subjects provided informed consent and underwent DECT, US, and XR of the aspirated joint and standardized joint (right wrist). All images were interpreted by a musculoskeletal radiologist and a rheumatologist trained in US; consensus was reached on each image. DECT images were post-processed using Siemens Syngo.via software, applying color-coded overlay indicating volume and location of CPP deposits. We considered two volume thresholds (cm^3) for a positive DECT scan. Imaging abnormalities defining a positive scan were: color-coded changes consistent with CPP (DECT); hyperechoic deposits in hyaline- or fibro-cartilage, or tendon (US); and chondrocalcinosis in hyaline- or fibro-cartilage (XR). We calculated sensitivity and 95% confidence interval (CI) of positive scans in the aspirated joint and prevalence (95% CI) in the standardized joint.

Results: Ten of 27 eligible patients enrolled. Mean (SD) age was 73 (9.7) years; 40% were female. Eight knees and two wrists were aspirated a mean (SD) of 17 (9) days before enrollment. Six subjects received intra-articular steroids before enrollment. Imaging results are shown in Table 1. In the aspirated joint, sensitivity (95% CI) was 90% (71-100%) for DECT volume $>0.40 \text{ cm}^3$, and 100% (100-100%) for DECT volume $>0.01 \text{ cm}^3$; 100% (100-100%) for US; and 70% (42-98%) for XR. In the standardized joint, DECT was positive in 20% (0-45%) for volume $>0.40 \text{ cm}^3$, and 90% (71-100%) for volume $>0.01 \text{ cm}^3$. XR chondrocalcinosis was present in 30% (2-58%) and US was positive in 80% (55-100%) of wrists.

Conclusion: DECT and US had high sensitivity for pseudogout using synovial fluid CPP crystals as the gold standard. Larger studies testing DECT sensitivity and specificity in pseudogout vs. other arthritis and establishing a volume threshold are needed.

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none

Table 1. Presence and location of imaging abnormalities in 10 pseudogout subjects

Subject	Aspirated joint			Standardized joint (right wrist)		
	DECT color-coded changes (cm^3)	US hyperechoic deposits	XR chondrocalcinosis	DECT color-coded changes (cm^3)	US hyperechoic deposits	XR chondrocalcinosis
1	PF, PSFC, M, TF, (0.48)	M	M	IC, IP1, MCP3, RC, TFCC (0.07)	TFCC	TFCC
2	ICN, M (0.73)	FC, M	M	CMC1 (0.08)	TFCC	none
3	ICN, M, PF, TF (2.85)	FC	ICN, M, PF	CMC1, CMC3, IC, IP1, MCP2, RC, TFCC (0.51)	TFCC	not done
4	ICN, M, PF, PSFC, Pop, Q (1.05)	FC	M	IC (0.10)	none	none
5	M, PSFC, Q (0.50)	FC	M, PF	IC, TFCC (0.04)	TFCC	none
6	M, PF (0.67)	FC	none	CMC1, IC (0.03)	TFCC	CMC1
7	M, PF, PSFC (1.33)	FC, M	M, PF	none (0.01)	TFCC	none
8*	IC (0.02)	IC, TFCC	none	IC (0.02)	IC, TFCC	none
9	M (0.45)	M	none	IC (0.05)	TFCC	none
10	CMC1, IC, MCP1-5, TFCC (0.82)	TFCC	IC, MCP1-2, RC, TFCC	CMC1, IC, MCP1-5, TFCC (0.84)	none	IC, MCP1-4, TFCC

*Right wrist was the aspirated and standardized joint. CMC: carpometacarpal. FC: femoral cartilage. ICN: intercondylar notch. IP: interphalangeal. M: meniscus. MCP: metacarpophalangeal. PF: patellofemoral. Pop: popliteus tendon insertion. PSFC: posterior superior femoral condyle. Q: quadriceps tendon. RC: radiocarpal. TF: tibiofibular. TFCC: triangular fibrocartilage complex.

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SAT0451 GOUT FLARES BECOME INFREQUENT DURING A TREAT-TO-TARGET STRATEGY OVER ONE YEAR: DATA FROM THE NOR-GOUT STUDY

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Background: Urate lowering therapy (ULT) is expected to prevent new gout flares. Treat-to-target ULT is however often not performed, and we need more evidence on how often patient become flare-free during ULT.

Objectives: Urate lowering therapy (ULT) is expected to prevent new gout flares. Treat-to-target ULT is however often not performed, and we need more evidence on how often patient become flare-free during ULT.

Methods: In a prospective observational study, patients with crystal-proven gout with a recent gout attack and insufficiently treated serum urate (sUA) level ($>360 \mu\text{mol/L}$ / $>6 \text{ mg/dl}$) were included. They received ULT with drug escalation during monthly follow-up until the target sUA level was met (sUA $<360 \mu\text{mol/L}$, or $<300 \mu\text{mol/L}$ if clinical tophi). Assessment in this ongoing data collection included demographic and clinical variables, serum urate levels, previous medication with allopurinol, colchicine and NSAIDs, co-morbidities, and health related quality of life (SF-36). Flares during the last six months of one year with "treat-to-target" were recorded. Bivariate analyses and logistic regression analyses examined factors associated with and prediction (odds ratio with 95% confidence intervals) of a flare-free period during months 6-12.