scenarios derived from the algorithm proposed by Nötzel et al (2): in scenario A, the DECT was performed first followed by ultrasound; in scenario B, ultrasound was performed first followed by DECT. Test performance such as sensitivity, specificity, positive and negative predictive value (PPV, NPV) were calculated for each imaging techniques. Statistical analysis was performed by SAS/STAT software and Macnemar test was used to compare the two scenarios.

Results: 40 consecutive patients were included. 3 patients had a score ≥ 8 from clinical data alone and classified as gout. The remaining 37 patients were included according to the two scenarios. In scenario A, 9/37 patients had a DECT positive with urate deposition leading to the diagnostic of gout with an ACR/EULAR score ≥ 8 . 7/37 patients had a positive DECT without reaching ACR/EULAR threshold (< 8). 21/37 patients had a negative DECT. The ultrasound study of these 28 patients did not find any sign of gout (DC sign). In scenario B, 6/37 patients had a DC sign and an ACR/EULAR score ≥ 8 . 1/37 patient had a DC sign but an ACR/EULAR score < 8 . 30/37 patients had no ultrasound DC sign. DECT in these 31 patients revealed sodium urate deposits in 3/31 patients, leading to a score ≥ 8 . DECT was positive in 7/31 patients with an ACR/EULAR score < 8 . The comparison between the 2 scenarios did not find a significant difference ($p = 0.250$). For the DC sign, sensitivity = 66%, specificity = 96%, PPV = 89% and NPV = 87%. For the presence of DC sign and/or tophus, the values were 91%, 96%, 91%, 96% respectively. For DECT, sensitivity = 100%, specificity = 75%, PPV = 63%, NPV = 100%.

Conclusion: Our results confirm that ultrasound (DC sign alone) and DECT have similar diagnostic performance in gouty arthritis in routine care. It seems clinically relevant to propose the ultrasound as first imaging modality considering both the presence of the DC sign and/or ultrasound tophus (not included in ACR-EULAR criteria). It significantly improves the sensitivity of ultrasound while maintaining its PPV, with less false positive patients compared to DECT.

REFERENCES:

- [1] Neogi T, Jansen TLTA, Dalbeth N, et al. 2015 Gout Classification Criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative. *Arthritis & Rheumatology*. 2015; 67:2557–68.
- [2] Nötzel A, Hermann K-G, Feist E, et al. Diagnostic accuracy of dual-energy computed tomography and joint aspiration: a prospective study in patients with suspected gouty arthritis. *Clin Exp Rheumatol*. 2018; 36 :1061–7.

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THU0597 ULTRASOUND REVEALS SUB-CLINICAL ATHEROSCLEROSIS IN PATIENTS WITH GOUT AND ASYMPTOMATIC HYPERURICEMIA

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Background: Accelerated atherosclerosis and the higher risk of developing premature cardiovascular disease are well known in chronic inflammatory rheumatic diseases. Moreover, strong evidence supporting both proatherogenic and protrombotic characteristics of high levels of uric acid have been published.

Ultrasound (US) measurement of the carotid intima-media thickness (cIMT) is a non-invasive outcome measure of premature sub-clinical atherosclerosis with a predictive value in terms of vascular events.

Objectives: To determine the prevalence of increased cIMT, as sign of pre-clinical atherosclerosis, in patients with gout and asymptomatic hyperuricemia by an automated ultrasound (US) method.

Methods: 342 subjects (138 with gout, 105 with asymptomatic hyperuricemia and 99 healthy control subjects) were enrolled. Before the US assessment, all patients underwent a clinical examination aimed to record age, gender, disease duration, smoking, ischemic cardiopathy, comorbidities (including diabetes mellitus, high blood pressure, dyslipidemia, renal insufficiency, obesity), and current therapy. Moreover, ESR, CRP, total cholesterol, HDL-high-density lipoprotein, triglycerides, fasting serum glucose, serum creatinine and uricemia were recorded. Patients with history of myocardial infarction, cerebrovascular events or autoimmune diseases were excluded.

US examinations of the IMT at both common carotids were performed by a rheumatologist expert in US, using a linear probe and an automatic method (QIMT) based on the radio-frequency technology. For the IMT, a cut-off point of 0.8 mm was adopted, according Mannheim cIMT Consensus.

Results: A total of 684 common carotids were assessed. In 65 (47.10%) out of the 138 patients with gout and 50 (47.62%) out of the 105 patients with asymptomatic hyperuricemia, US detected an increased cIMT and only 9 (0.09%) of the control group patients had an increased cIMT ($p=0.0001$). The regression analysis found a significant positive correlation between increased cIMT and disease duration in gout group ($p=0.001$) and between the level of uric acid and increased cIMT in asymptomatic hyperuricemic patients ($p=0.009$). No significant correlation was found with the other clinical and laboratory parameters. There was a significant difference in cIMT between in gout and control groups ($p=0.0001$) and between asymptomatic hyperuricemia and control group ($p=0.0001$).

Conclusion: Our results demonstrate that patients with gout and hyperuricemia without clinically evident cardiovascular disease have a high prevalence of atherosclerosis represented by the increased cIMT.

Disclosure of Interests: None declared

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THU0598 ROLE OF DUAL-ENERGY CT AS A SCREENING TOOL FOR CORONARY GOUT

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Background: Gout is prevalent in older men and has been demonstrated as independent cardiovascular risk factor. Presence of clinical gout rather than isolated hyperuricemia is related to the increased cardiovascular risk. Dual-Energy CT (DECT) has proven to be of high sensitivity and specificity in detection of monosodium urate (MSU) deposits in joints and soft tissues.

Objectives:

1. Evaluate DECT as a potential screening tool for monosodium urate deposits within the coronary arteries.
2. Calculate prevalence of coronary gout in patients with confirmed tophaceous gout in comparison to asymptomatic control group.

Methods: Cases were retrospectively assigned into two groups. The first (tophaceous gout) group included patients who were referred for DECT gout screening. The inclusion criteria were: males > 50 years of age and clinical diagnosis of tophaceous gout confirmed by DECT. The second (control) group included patients who underwent non-contrast DE Cardiac CT for calcium scoring during the same duration as part of cardiovascular risk workup. Inclusion criteria were males > 50 years of age, no clinical diagnosis of gout and Agatston calcium score less than 400. All DECT scans were done on the same scanner, which was validated and adequately titrated before the start of and during the study. All scans were reviewed by two radiologists with expertise in DECT gout deposits.

Results: Among the 13 cases that met the inclusion criteria for the tophaceous gout group, 11 were positive (84.62%) for coronary MSU deposits. Among the 48 cases that met the inclusion criteria for the control group: 47 were negative and one was positive (2.08%). DECT sensitivity was 84.62% (95% CI: 54.55-98.08%), specificity was 97.92% (95% CI: 88.93- 99.95%), positive predictive ratio was 91.67% (95% CI: 60.94- 98.73%), negative predictive value was 95.92% (95% CI: 86.78- 98.83%) and accuracy was 95.08% (95% CI: 86.29- 98.97%).

Conclusion: Coronary MSU deposits are seen in 84.62% of tophaceous gout patients and in 2.08% of gout-asymptomatic individuals (of the same