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SAT0437 **ABSTRACT WITHDRAWN**

SAT0438 **TO SCREEN OR “WAIT AND SEE” – CAN HLA GENE TESTING PREVENT ALLOPURINOL RELATED SEVERE CUTANEOUS ADVERSE REACTION? AND WHO ARE AT RISK?**

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Background: Allopurinol is one of the most common causes of drug-induced severe cutaneous adverse reaction (SCAR). HLA-B*58:01 gene positivity is shown to be the strongest risk factor. However, local data on HLA-B*58:01 test and allopurinol-related SCAR is scanty. Moreover, there is no consensus on routine checking of HLA-B*58:01 before starting allopurinol in Hong Kong and this test is performed according to physicians' clinical judgement.

Objectives: This study review the use of HLA-B*58:01 in daily practice, included the clinical characteristics and its implications in patients who developed allopurinol allergy in a tertiary internal medicine and rheumatology referral center.

Methods: This is a retrospective study of patients who had HLA-B*58:01 checked in Queen Elizabeth Hospital from January 2008 to December 2017. Patients' demographic data, clinical characteristics, laboratory findings, gene profile, drug allergy records were retrieved from Clinical Data Analysis and Reporting System and outcomes were reviewed.

Results: Within 10 years, 432 patients had HLA-B*58:01 checked - 23% (N=99) were positive (Figure 1). Among patients who were HLA-B*58:01 positive, 86% had clinical and/or crystal proven gout and 68% were male (M:F=67:32). Gene testing was performed as screening in 58% (57/99) and after skin reaction in 42% (42/99). Alternative urate lowering therapy was considered for patients who screened positive for HLA-B*58:01 and none developed SCAR (Febuxostat 16 patients, probenecid 3 patients). For those who reported skin reaction after allopurinol, 50% had minor rash while 50% (each 21 patients) developed SCAR. In SCAR-group, 52% was male, 76% were chronic kidney disease (CKD) $\geq$ stage 3 and/or age $\geq$ 60years, with mean age 71.2 $\pm$ 14.2 and mean estimated glomerular filtration rate 57.1 $\pm$ 30.7 mL/min/1.73m² (Figure 2 and table 1). The mean time interval to SCAR was 44.8 $\pm$ 52.1 days and the mean starting dose of allopurinol was 154.6 $\pm$ 90.7 mg/day. SCAR was associated with substantial morbidity and mortality: 71% (15/21) required steroid and/or intravenous gammaglobulin in addition to supportive care and 17% (4/21) died in the same admission due to sepsis including pneumonia. For patients who were tested negative for HLA-B*58:01, although 12% reported skin reaction, these were self-limiting and all recovered after allopurinol was stopped. Renal impairment was less pronounced in this group, yet 38% were CKD $\geq$ stage 3.

Conclusion: In our cohort, HLA-B*58:01 can identify most of the high risk patients who prompt to develop SCAR. Thus in routine practice, clinicians should consider screening HLA-B*58:01, especially in patients with CKD $\geq$ stage 3 or age $\geq$ 60year, before starting allopurinol, and consider alternatives if positive, to prevent allopurinol-related SCAR.

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Figure 1. Total 432 patients had HLA-B*58:01 checked in 10 years period (January 2008 – December 2017). 99 patients were tested positive. Forty-two of these patients had the gene checked after development of allopurinol allergy. 21 of them had minor rash while 21 of them presented as SCAR. In HLA-B*58:01 negative patients, only 12% produced self-limiting rash and all recovered after allopurinol stopped.

Figure 2: Relationship between eGFR and age in patients who developed allopurinol-induced SJS / TEN / DRESS (N=21).

Table 1. Summary of patients with allopurinol-induced SCAR (N=21), 76% (16 patients) were CKD $\geq$ stage 3 and/or age $\geq$ 60 years.

Sex	Age	Indication of ULT	eGFR	Days to allergy	Allopurinol starting dose	Outcome	Treatment
F	79.6	gout	76.4	5	200mg/day	Died	IVIg, steroid
F	86.6	gout	38.5	3	unknown	recovered	Steroid
M	56.7	hyperuricemia	84.1	22	unknown	recovered	Steroid
M	55.3	gout	32.3	50	100mg/day	recovered	Steroid
M	83.6	gout	52.9	52	unknown	Died	Supportive
M	95.3	gout	13.7	237	50mg/day	Died	IVIg, steroid
F	77.4	gout	19.6	119	100mg/day	recovered	Supportive
M	72.6	gout	45.1	7	unknown	recovered	Steroid
M	73.3	gout	51.4	30	unknown	recovered	IVIg, steroid
F	74.9	gout	48.6	39	unknown	recovered	Supportive
M	75.5	gout	38.2	38	200mg/day	Died	IVIg
M	77.4	chemotherapy	91.9	18	300mg/day	recovered	Supportive
M	33.5	gout	116.6	22	unknown	recovered	Steroid
F	52.2	chemotherapy	112.5	35	unknown	recovered	Steroid
F	71.7	gout	47.3	12	unknown	recovered	IVIg, steroid
F	80.6	hyperuricemia	15.1	37	unknown	recovered	Steroid
F	68.2	gout	40.8	28	100mg/day	recovered	Steroid
M	59.3	gout	107.6	unknown	unknown	recovered	Supportive
M	81.2	gout	46	67	200mg/day	recovered	IVIg
F	81.4	gout	49	50	50mg/day	recovered	Supportive
F	57.9	gout	72.9	20	300mg/day	recovered	Steroid

Abbreviation: eGFR = estimated glomerular filtration rate (mL/min/1.73m²). ULT = urate lowering therapy. IVIg = intravenous immunoglobulin

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SAT0439

RENOPROTECTIVE EFFECT OF URATE LOWERING THERAPY IN GOUTY PATIENTS WITH MODERATE CHRONIC KIDNEY DISEASE

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Background: Approximately 25% of gouty patients suffer from chronic kidney disease (CKD). High serum uric acid (sUA) levels have been related to estimated glomerular filtration-rate (eGFR) imbalance. Beneficial effect of treatment with xanthine oxidase inhibitors (XOI), mostly allopurinol, has already been proved in patients with CKD and asymptomatic hyperuricemia. Although several studies have described the efficacy and renal safety of treatment with XOI in gout, few authors have analyzed its effect on GFR in gouty patients with moderate CKD.

Objectives: To assess the effect of XOI therapy in gouty patients with moderate CKD, in terms of eGFR changes.

Methods: In this multicenter, retrospective study, we included patients from 4 centers diagnosed with gout (EULAR/ACR criteria) and stage-3 CKD according to Cockcroft-Gault formula (eGFR 30-59 ml/min/m²) who received XOI (febuxostat and allopurinol) with a follow-up for 6 and 12 months. We used clinical records to collect patient features (age, sex, body mass index, sUA, hypertension (HTA), diabetes mellitus (DM), dyslipidemia (DL), cardiovascular events), treatments (lipid-lowering drugs, anti-hypertensives, antidiabetics, antiplatelet therapy, NSAIDs, urate lowering treatments and colchicine) and gout history (duration of disease, tophi presence, clinical and ultrasonographic (US) pattern (monoarticular, oligoarticular, polyarticular).

Statistical analysis: descriptive analysis of variables. Mixed effects model linear regression Differences were considered significant p<0.05.

Results: 52 patients with gout and stage-3 CKD were identified. We obtained complete 6 and 12-months follow-up from 37 patients (33 males and 4 females). Mean age was 74.11±6.96 years, 32.4% DM, 83.78% HTA, 56% DL, 40% tophaceous gout, Clinical and US pattern (37.8% polyarticular, 37.8 oligoarticular and 24.3% monoarticular). Febuxostat 19 patients, Allopurinol 18. Mean baseline sUA was 8.63±1.33 mg/dl, and baseline eGFR was 47.77±8.45 ml/min/m². To assess the effects of considered variables over eGFR a linear mixed model was adjusted using nlme R-package. Within the adjusted model we obtained significant differences in eGFR between baseline and 6 months (p=0.0081), and between baseline and 12-months (p=0.0028). sUA decreased significantly between baseline and 6 (p=0.0181) and 12 months (p=0.0188).

Conclusion: Reduction of sUA levels in gouty patients with XOI entails an improvement of eGFR in stage-3 CKD. These findings suggest that the response to urate lowering therapy take place in the first 6 months, leading to an improvement in eGFR in this period. From 6 months to 1 year, sUA levels are stabilized and so is eGFR.

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SAT0440

DOES MONOSODIUM URATE DEPOSITION IN GOUT PATIENTS ALTER THE BIOCHEMICAL PROPERTIES OF MENISCAL FIBROCARILAGE AND HYALINE CARILAGE? A DUAL-ENERGY COMPUTED TOMOGRAPHY STUDY

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Background: Dual-energy computed tomography (DECT) is increasingly used in gout to assess monosodium urate (MSU) crystal deposition in soft tissues. In contrast to ultrasound (US) with its typical double-contour (DC) sign, DECT seems unable to identify MSU deposition deep within joints, where flares occur. DECT has recently shown its potential for discriminating between the various crystal types owing to their biochemical signature.

Objectives: We aimed to assess whether DECT attenuation properties differed between knees of gout patients with and without deep articular MSU deposition characterized by the DC sign on US; more specifically if MSU deposition altered the electron density (ρ_e) of various knee structures.

Methods: Consecutive patients with gout were included in this cross-sectional study and their knee MSU burden was assessed using combined DECT and US. Knees were assigned to either DC+ or DC- groups depending on the presence/absence of the DC sign on US. Regions of interest (ROI) were drawn in the following knee zones on a specific coronal DECT image: hyaline cartilage of the patellofemoral and medial and lateral tibiofemoral joint spaces, as well as medial and lateral menisci. Regions of interest that exhibited chondrocalcinosis were excluded. Five DECT parameters were obtained: CT numbers (HU) at 80 and 140 kV, dual-energy index (DEI), electron density (ρ_e), and effective atomic number (Zeff). Knee zones were compared between groups using mixed linear models.

Results: A total of 115 patients were included. Gout duration was 9.8 ±9.0 years, mean serum urate was 7.3±2.3 mg/dL and 48 (41.7%) patients were under urate lowering therapy. Out of a total 230 knees, 46 (20%) were assigned to the DC+ group. Menisci from DC+ and DC- patients had a mean (± standard deviation) Zeff of 7.5±0.2 and 7.6±0.2 (p=0.49), mean ρ_e of 77±14 and 73±13 (p=0.15) and mean DEI of -0.0003±0.0036 and 0.0001±0.0042 (p=1), respectively. Hyaline cartilage from DC+ and DC- patients had a mean Zeff of 7.6±0.2 and 7.7±0.2 (p=0.49), mean ρ_e of 65±21 and 60±18 (p=0.17) and mean DEI of 0.0020±0.0049 and 0.0025±0.0043 (p=1), respectively. No differences were noted between groups in the patellofemoral joint space.

Conclusion: There is an expected increased electron density (ρ_e) in meniscal fibrocartilage and hyaline cartilage of gout patients with MSU deposition, even though DECT measures do not reach statistical significance. Particular attention will be given to patients with high MSU burden (large DC signs on US).

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SAT0441

SKIN ADVERSE EVENTS WITH FEBUXOSTAT IN GOUT PATIENTS WITH PREVIOUS SKIN REACTIONS TO ALLOPURINOL. A MULTICENTRE DESCRIPTIVE STUDY

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Background: Allopurinol is first-line urate-lowering drug (ULD) for patients with gout. However, around 10% of them refer adverse events, often at skin, which can be severe. Febuxostat is a non-purine selective xanthine oxidase inhibitor, often a therapeutic alternative in this setting, though data regarding safety in those patients with previous cutaneous adverse reactions (CAR) to allopurinol is still limited. Some cases and small