lowering with allopurinol. This could have important implications for gout treatment, as it would suggest that screening for depressive symptoms might be indicated for treatment success. Additional analyses will address whether this effect can be explained by treatment noncompliance.

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AB0868

ULTRASOUND MONOSODIUM URATE CRYSTAL DEPOSITS IN THE JOINTS OF GOUT PATIENTS CORRELATE WITH THE WORSENING OF THE HEART SYSTOLIC FUNCTION

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Background: The connection between gout and cardiovascular (CV) complications has been investigated a lot. Recent studies demonstrate that higher body urate load is an indicator of increased CV risk.

Objectives: To determine whether ultrasound deposits of monosodium urate (MSU) crystals in the joints of gout patients (pts) correlate with the worsening of the heart systolic function and left ventricular hypertrophy.

Methods: This was a single-center cross-sectional study including 56 consecutive gout pts, 40 males and 16 females, in a mean age 58.9±13.2 years with disease duration 6.42±6.93 years. All of them underwent transthoracic echocardiography and ultrasound examination of the joints of the hands, elbows, knees, ankles and feet. By transthoracic echocardiography, conducted with 2.5 MHz transducer phased array working with pulse Doppler frequency of 2.5 MHz, were measured parameters which are independent predictors of CV risk: left ventricular mass index (LVMI), ejection fraction (EF), fractional shortening (FS) and systolic motion of the myocardium (Sm). Ultrasound studies of the joints were performed with a high-frequency, linear transducer, 4-15 MHz. The existence of double contour sign, tendon MSU deposits, snow storm, tophi and tophi with erosions or a combination of these ultrasound features was assessed. Examinations were done in accordance with the latest published guidelines. Data were analyzed by Kolmogorov-Smirnov, Mann-Whitney, t-test, Kruskal Wallis test and Spearman correlation.

Results: 49(87.5%) of the pts had ultrasound evidence of crystal deposits. Serum uric acid levels were equal in pts with and without MSU deposits in the joints, (p=0.569). Among individuals without ultrasound MSU deposits, pts with MSU findings in one joint area and in those with crystal deposits in two or more joint areas we did not find a difference in the mean values of LVMI (mean±SD; 126.86±21.95 g/m² vs 120.09±31.50 g/m² vs 128.68±35.19 g/m², p=0.761), FS (mean±SD; 37.73±4.62% vs 38.25±3.51% vs 35.40±6.57%, p=0.205) and Sm (mean±SD; 0.27±0.35 m/s vs 0.11±0.02 m/s vs 0.10±0.02 m/s, p=0.266). A tendency of lower EF without reaching significance was detected in subjects with crystal deposits in two or more joints, (p=0.071). The values of LVMI (p=0.295), EF (p=0.396), FS (p=0.566) and Sm (p=0.154) were similar in pts without MSU findings, subjects who had a double contour sign, those with tendon MSU deposits, pts with snow storm, individuals with tophi and in pts with tophi and erosions. However, pts with crystal deposits in the knees and in the tibiotalar joints had lower EF (p=0.047; p=0.049, respectively) and lower FS (p=0.036; p=0.016, respectively) compared to those who had no crystal deposits in these joint areas. Further a weak negative correlation was detected between the number of joints with crystal deposits and EF (r= -0.294, p=0.029) and FS (r= -0.292, p=0.030). Regarding LVMI and Sm no correlation was established with the presence of crystal deposits in the joints (r=0.079, p=0.568 and r= -0.242, p=0.076).

Conclusion: Despite the lack of difference in serum uric acid between pts with and without MSU deposits in the joints, those with MSU findings

in the knees and in the tibiotalar joints had more deteriorated systolic function of the heart in comparison to pts without crystal deposits in these joint areas. A negative correlation existed between the number of joints with crystal deposits and functional pumping indices of the heart. On the other hand, MSU deposits in the knees and in the tibiotalar joints are associated with higher urate load than deposits in the small joints. We suggest that the higher urate load is connected to the worsened pumping function of the heart.

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AB0869

SERUM LEVELS OF ROS PRODUCTS, NO AND ASCORBATE RADICALS IN GOUT PATIENTS ARE NOT ASSOCIATED WITH ARTERIOSCLEROTIC COMMON CAROTID ARTERIES CHANGES AND USE OF XANTHINE OXIDASE INHIBITORS

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Background: Oxidative stress along with chronic inflammation and hyperuricemia links gout to arteriosclerotic vascular changes. Studies examining the connection between the level of oxidative stress and arteriosclerotic carotid arteries changes in gout patients (pts) are not enough.

Objectives: To establish the association between the serum levels of reactive oxygen species (ROS) products, nitric oxide (NO) radicals and ascorbate radicals with intima-media thickness (IMT) and common carotid artery resistive index (CCARI) in gout pts, and to find out whether the connection is more pronounced when tophi are present.

Methods: This was a cross-sectional study including 71 gout pts in a mean age 56.86±11.95 years, 61 males and 10 females (45 without tophi pts and 26 gouty tophi pts). Serum levels of ROS products, NO radicals and ascorbate radicals were determined by ex vivo electron paramagnetic resonance (EPR) study. All EPR measurements were performed on an X-band EMXmicro, spectrometer Bruker, Germany, equipped with Standard Resonator. Spectral processing was done by using Bruker WIN-EPR and Sinfonia software. By applying ultrasound of the common carotid arteries, conducted with 10 MHz linear transducer working with pulse Doppler frequency of 5 MHz, were measured IMT and CCARI. Statistical analyses were done by One-Sample Kolmogorov-Smirnov, Chi-Square, Fisher's exact test, Mann-Whitney, t-test and Pearson correlation.

Results: Gouty arthritis without tophi and gouty tophi pts were age-matched, (p=0.309). The mean values of serum uric acid (p=0.569) and distribution of the subjects with gout attack (p=0.173), smoking (p=0.828), arterial hypertension (p=0.735), dyslipidemia (p=0.646), chronic renal failure (p=0.233) and obesity (p=0.623) was equal in the groups. In the tophi group CRP and the number of pts who had suffered a cardiovascular event were higher (p=0.048; p=0.031). Serum levels of ROS products, NO radicals and ascorbate radicals were comparable in gouty arthritis without tophi and in gouty tophi pts (p=0.783; p=0.521; p=0.651). In the groups no difference was registered in CCARI (p=0.273) but intima-media was thicker in the presence of tophi, (p=0.027). No correlation existed between ROS products, NO radicals and ascorbate radicals with IMT (r= -0.100, p=0.405; r= -0.186, p=0.121; r=0.154, p=0.201). ROS products, NO radicals and ascorbate radicals did not correlate with CCARI (r= -0.110, p=0.359; r= -0.066, p=0.587; r=0.094, p=0.436). Among treated and untreated with Allopurinol pts no difference was found in the mean values of ROS products (p=0.169), NO radicals (p=0.167), ascorbate radicals (p=0.460), IMT (p=0.873) and CCARI (p=0.930). Among treated and untreated with Febuxostat pts the mean values of ROS products (p=0.546), ascorbate radicals (p=0.309), IMT (p=0.842) and CCARI (p=0.100) were similar. A tendency of higher serum NO radicals was established in pts taking Febuxostat in comparison to those not treated with it (p=0.076).

Conclusion: Although between the earlier and the later stage of the disease there was no difference in the level of oxidative stress, the level of chronic inflammation was higher in gouty tophi pts. No connection was found between serum ROS products, NO radicals and ascorbate radicals with arteriosclerotic changes of the carotid arteries and use of xanthine oxidase inhibitors. We suggest that in gout pts chronic inflammation has an important role in the process of atherogenesis.

Abstract AB0870 Table 1. Number of discharges with a principal diagnosis of stroke, by age group and sex, reported to HIPE, 2007-2017

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Age Group											
0-29 years	191	193	112	93	136	118	90	94	92	97	89
30-34 Years	62	53	62	65	57	65	56	54	59	56	57
35-39 Years	93	107	119	68	82	75	82	63	98	93	81
40-44 Years	141	153	134	162	152	163	125	123	131	144	158
45-49 Years	215	169	170	205	232	214	198	193	176	249	201
50-54 Years	315	293	277	284	279	299	254	307	289	309	295
55-59 Years	338	386	395	417	393	345	372	415	386	398	413
60-64 Years	467	560	523	508	500	504	492	489	559	565	505
65-69 Years	566	578	585	600	631	643	662	657	667	677	766
70-74 Years	730	709	763	677	712	682	749	782	821	838	778
75-79 Years	886	890	935	937	889	926	845	867	909	862	915
80-84 Years	967	902	975	924	860	959	878	944	912	935	927
85-89 Years	648	695	728	699	703	717	705	695	666	697	702
90 Years and over	278	315	325	363	342	388	354	352	401	411	412
Sex											
Male	2,988	3,066	3,107	3,087	3,071	3,174	3,032	3,198	3,368	3,413	3,499
Female	2,909	2,937	2,996	2,915	2,897	2,924	2,830	2,837	2,798	2,918	2,800
Total	5,897	5,897	5,897	5,897	5,897	5,897	5,897	5,897	5,897	5,897	5,897

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AB0870 IS THE INCIDENCE OF GOUT SIMILAR TO OTHER RISK FACTORS IN PATIENTS PRESENTING WITH STROKE OR MYOCARDIAL INFARCTION?

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Background: Gout is a common form of inflammatory arthritis. The prevalence of gout in Europe is between 0.9-2.5% with rates as high as 4% reported in Ireland.¹ Studies have suggested gout as a risk factor in patients presenting with myocardial infarction (MI) and stroke (CVA). However the incidence gout in patients presenting to hospital with MI or CVA in Ireland has not previously been assessed.

Objectives: The aim of this study was to assess the incidence of gout in patients presenting with CVA and MI in Ireland. A further objective was to explore if the incidence of gout is similar to other risk factors such as hypertension, diabetes mellitus and dyslipidemia in Irish patients presenting with CVA and MI.

Methods: The Hospital In-Patient Enquiry Scheme (HIPE) was used to identify patients admitted with stroke or myocardial infarction from 62 acute public hospitals in Ireland from January 2007 until December 2017. HIPE is a national database which records coded hospital admission and demographic, clinical and administrative data on discharges from, and deaths in, acute public hospitals nationally.² Discharges are coded using the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), Australian Classification of Health Interventions (ACHI), Australian Coding Standards (ACS), 8th Edition. Age, gender and number of patient admissions with MI or CVA with gout, diabetes, hypertension, peripheral vascular disease (PVD) and hyperlipidemia were recorded.

Results: From 2007 until 2017, 64,867 were admitted with a diagnosis of CVA in Ireland. The age and gender of patients admitted with a principal diagnosis of CVA are outlined in Table 1. 70,628 patients were admitted with MI.

In the CVA population, 14.5% of patients had diabetes. Incidence of gout in patients with CVA (0.7%) was similar to patient with the risk factors of hyperlipidemia (0.91%) and PVD (0.94%).

The incidence of gout in the MI group (0.5%) was lower when compared to the stroke group (0.77%). The presence of diabetes as a risk factor (6.7%) was significantly higher compared to gout (0.5%) in patients admitted with myocardial infarction. Chart one outlines the incidence of each risk factor in patients discharge with a primary diagnosis of MI in Ireland between 2007 and 2017

Conclusion: The incidence of gout in patients presenting with CVA or MI in Ireland was low compared to other risk factors including diabetes. In patients presenting with MI then incidence of gout is lower than in patients presenting with CVA.

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Chart 1: Incidence of risk factors in patients with a discharge diagnosis MI, reported to HIPE, 2007-2017

Figure 1

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AB0871 ASSESSMENT OF THE KIDNEYS AND URINARY TRACT DYSFUNCTIONS THAT INCREASE THE RISK OF DEVELOPING CHRONIC KIDNEY DISEASE IN PATIENTS WITH GOUT BASED ON COMPLEX RENAL SCINTIGRAPHY

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Background: In 40% of cases patients with gout can develop gouty nephropathy, the "kidney mask" of gout. The newest version of the technology for systemic examination of nephrourological status based on complex renal scintigraphy (SENS-CRS) has been developed at the «N.N. Blokhin National Medical Research Center of Oncology». SENS-CRS at the lowest doses of radiation (0.6 mSv per adult) allows for an in-depth differential analysis of dysfunctions of the renal parenchyma, upper and lower urinary tract which increase the risk of chronic kidney disease (CKD) development.