Conclusions: Our thematic synthesis identified several barriers to gout care, particularly knowledge gaps among both providers and patients as well as issues with system barriers and support regular medication use are urgently needed to improve gout care.

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THU0461 ACCURACY OF HUMASENS-PLUS POINT-OF-CARE URIC ACID METER USING CAPILLARY BLOOD OBTAINED BY FINGERTIP PUNCTURE

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Background: A 3-year random sample of the population aged 18 to 60 years old was redressed according to the 2014 New Caledonia census. Face-to-face interviews were performed by trained nurses who used a predefined questionnaire along with planned physical measurements. All participants underwent capillary measurement of creatinine level (StatSensor) and all men and only women older than 40 were invited to undergo urate-lowering therapy (ULT). The study included individuals aged 18 to 60 years old with a recent acute myocardial infarction (n=2); and patients with a diagnosis of acute/chronic gout, 6 of the 19 studies were conducted in New Caledonia; 3 in Soladis Clinical Studies, Roubaix; 2 in Soladis Clinical Studies, Roubaix; 2 in Soladis Clinical Studies, Roubaix.

Results: The management of gout is the long-term lowering of uricemia below predetermined targets (300 or 360 μmol/l). Monitoring of uricemia in gout patients is therefore important, and is presently done in the laboratory on plasma samples obtained from fingertip puncture. An accurate uric acid (UA) meter allowing rapid testing by the health care professionals and self-measurement by the patient should improve management of gout.

Objectives: This study aimed to assess the reliability of immediate UA measurement of capillary blood samples obtained from fingertip puncture using the HumaSens®plus point-of-care meter (meter) compared with that of a standard laboratory assay (lab).

Methods: Capillary UA levels were measured from 236 consenting diabetic patients using the commercially available HumaSens®plus UA meter (European Commission marked and CE labeled for EU market use). Each patient also had a plasma UA measurement in the biochemistry laboratory using an uricase automated colorimetric assay. Since the UA meter has a dynamic range of 180–1190 μmol/l, when the values were out-ranged (meter reading LO or HI), they were immediately compensated and measured again using plasma measurements. Agreement between capillary and plasma UA levels was assessed by Intra-class Correlation Coefficient (ICC) and Bland-Altman graphic representation. Capillary UA threshold for detection of hyperuricemia by the HumaSens®plus meter was 330 μmol/l (sensitivity 0.89, specificity 0.89, area under the ROC curve 0.95). Based on regression, plasma uricase of 360 μmol/l corresponded to 343 μmol/l. Among the biological parameters tested, only hematocrit impacted capillary uric acid measurements, however negligibly. No medication appeared to significantly affect test results. Plasma uricase measurements were better correlated to LC-MS measurements (r=0.98 [0.96–0.99]) than capillary measurements (r=0.84 [0.75–0.90]).

Conclusions: Results of the HumaSens®plus meter were reasonably comparable to those of the laboratory assay. It is easy to use and may be useful in clinical and in epidemiologic studies.

Disclosure of Interest: None declared

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THU0462 MORTALITY IN PATIENTS WITH GOUT: A SYSTEMATIC REVIEW

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Background: Gout is a chronic, progressive, inflammatory disease characterised by elevated serum uric acid (sUA) levels (1). In Europe the prevalence of gout ranges from 0.9–2.5%, and is increasing (2). Published data indicate that gout is an independent risk factor for both all-cause and cardiovascular (CV)-related mortality (3, 4).

Objectives: To conduct a systematic review to identify studies reporting the association between gout and mortality (all-cause and CV-related).

Methods: Relevant publications were identified by interrogating electronic databases; Medline & MEDLINE In-Process, EMBASE and the Cochrane Library (accessed 3 May 2016). Eligibility criteria included adult patients with a definitive diagnosis of acute/chronic gout (self-reported/physician diagnosed), with no restriction on publication date, study design or geography.

Results: Nineteen studies met the pre-defined inclusion criteria and were reviewed. The studies were conducted in: the US (n=8); Taiwan (n=5); Canada (n=3); New Caledonia; (n=1); Singapore (n=1); and the UK (n=1). In addition to patients having a diagnosis of acute/chronic gout, 6 of the 19 studies were conducted in the following patient subgroups: renal transplant (n=1); chronic kidney disease (n=2); patients with a recent acute myocardial infarction (n=2); and patients with heart failure (n=1). There were several consistent findings across the 19 studies: (i) gout was associated with an increase in both all-cause mortality (reported hazard ratios [HR] ranged from 1.13 to 2.37) and CV-related mortality (reported HR ranged from 1.10 to 3.88) compared with patients without gout; (ii) the increased risk in all-cause mortality was primarily driven by an increase in CV-related mortality; (iii) the increased mortality risk was higher in females than males.

Conclusions: This systematic review confirms that gout is associated with an increased risk of all-cause and CV-related mortality; this was consistently reported across the eligible studies. The findings highlight the risk associated with gout and the need for appropriate treatment of this curable disease.

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THU0463 EPIDEMIOLOGY OF GOUT AND HYPERURICEMIA IN NEW CALEDONIA

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Background: New Caledonia is a Pacific island of 270,000 inhabitants with mixed ethnicities, including Melanesians (39.1%) and Polynesians (10.2%) and people of European ancestry (27.2%).

Objectives: To determine the prevalence of gout and hyperuricemia in the various ethnicities and to characterize associated factors.

Methods: A 3-degree random sample of the population aged 18 to 60 years old was redressed according to the 2014 New Caledonia census. Face-to-face interviews were performed by trained nurses who used a predefined questionnaire along with planned physical measurements. All participants underwent capillary measurement of creatinine level (StatSensor) and all men and only women older than 40 were invited to undergo urate-lowering therapy (ULT) with no restriction on publication date, study design or geography.

Results: The use of capillary UA meter allows rapid testing by the health care professionals and self-measurement by the patient should improve management of gout. The use of capillary UA meter allows rapid testing by the health care professionals and self-measurement by the patient should improve management of gout.
than 40 years underwent uricemia testing (HumaSens). Gout was defined by a validated algorithm (1). Hyperuricemia was defined by capillary level equivalent to plasma uric acid level (PUA) >6 mg/dl (2) and/or urate lowering drug (ULD) prescription.

Results: 1,144 participants (mean age 37.7 years; 50.4% men) were included. Polynesian patients were redressed in hospital (52.8% vs. 99.2%, p=2.2–4.9). The prevalence was 4.1% (1.8–8.9%), 2.6% (1.4–4.7%), 6.7% (2.5–16.8), and 1.9% (0.5–6.6) for Europeans, Melanesians, Polynesians and other ethnicities, respectively. After adjustment for age and sex, Polynesians showed higher risk for gout than Europeans (adjusted odds ratio [aOR] 4.57 [95% CI 1.3–16.7]). Prevalence of hyperuricemia, determined in 658 participants, was 67.0% (95% CI 61.9–71.6). Prevalence of hyperuricemia was greater for Polynesians (aOR 9.17 [3.2–26.4]), Melanesians (aOR 4.02 [2.2–7.2]) and other ethnicities (aOR 2.18 [1.1–4.5]) than Europeans. On univariate analysis, factors associated with gout were hyperuricemia, male gender, age, BMI, waist circumference, BMI, female hypertension, diabetes, history of major episodes of depression and cancer but not dietary factors or physical activity, despite a consistent association with BMI. Among gout and non-gout patients, 45.9% and 0.7% were receiving ULD. Overall, 29.6% of patients receiving ULD had proper control of PUA levels (>6 mg/dl).

Conclusions: As compared with Europe, in New Caledonia, the prevalence of gout and hyperuricemia was high, including in patients with European descent, as was previously reported for New Zealand (3). The prevalence of gout and hyperuricemia differed by ethnicity. For Melanesians, the prevalence of hyperuricemia was higher but risk for gout similar to that for Europeans, so factors (e.g., genetic) other than those involved in hyperuricemia may intervene in the risk of gout.

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THU0465 CALCIUM PYROPHOSPHATE DEPOSITION DISEASE AND OSTEARTHROSIS: TWO FACES OF THE SAME MEDAL? AN ULTRASONOGRAPHIC AND MICROSCOPY STUDY

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Background: Calcium pyrophosphate deposition disease (CPPD) and Osteoarthritis (OA) are frequently associated and CPPD with OA is recognized as a clinical entity [1]. However, the differences in both aetiological, histological and clinical aspects between the two diseases are not clear and how CPPD and OA could affect each other is still a matter of debate.

Objectives: To assess the differences between CPPD and OA in terms of anatomic alterations of the joint and to compare OA patients with and without the presence of joint effusion.

Methods: Patients with diagnosis or suspicion of chronic inflammatory rheumatic conditions based on clinical, laboratorial and ultrasonographic criteria were enrolled. OA and CPPD patients were included in this study and their joint fluid samples were evaluated. The CPP crystals detectable in a single slide were carried out. Depending on the variables, chi-square, Mann Whitney and Spearman Ro tests were used for statistical analysis.

Results: 49 patients (28 women), mean age 70.29 yo (SD±10.93) were enrolled in the study; 23 subjects presented OA and 26 CPPD (23.07% acute arthritis, 77.6% CPPD with OA). At US, a statistically significant difference between CPPD and OA was found only for the grade of effusion, being more abundant in CPPD patients. On the contrary, no differences were found regarding SH, PD, T, F, SF. OA patients showed a higher volume of SF, a higher total WBC count with a higher polymorphonuclear (PMN) cells percentage and lower monocytes percentage than patients with OA. Further, both total cell count and PMN percentage were positively correlated with the number of crystals in the SF. On the other hand, no statistically significant differences were found in the content of low monocytes between the two groups.

Conclusions: According to these results, patients with CPPD and OA present some distinct features, mainly regarding the two characteristics of the SF, compared to patients with OA alone. These differences may reflect different underlying pathogenetic pathways for the two diseases. Surprisingly, the concentration of inorganic ions in the two populations was similar. Further studies are necessary in order to better understand the link between CPPD and OA and the role of ions concentration in the SF for the formation of crystals.

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THU0464 A GENOME-WIDE ASSOCIATION STUDY OF GOUT IN PEOPLE OF EUROPEAN ANCESTRY

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Background: Gout progresses through three stages: hyperuricemia, deposition of monosodium urate (MSU) crystals, and innate immune system response to MSU crystals. Genome wide association studies (GWAS) have provided insight into the molecular control of progression to hyperuricemia. However, less is known about the progression from hyperuricemia to gout.

Objectives: To conduct a GWAS for gout (where an immune response to MSU crystals has occurred) using 5,835 cases - the largest GWAS of gout to date.

Methods: The GWAS comprised 3 data sets: N2/Eurogout (2,365 clinically-ascertained cases; 1,485 controls), the Health Professionals Follow-Up (HPF) and Nurses’ Health Studies (NHS) (1,038 cases, self-ascertained using ACR criteria; 1,095 controls), and UK Biobank (2,432 cases, ascertained by self-report of gout, hospital records, and/or use of urate-lowering therapy; 102,989 controls). The N2/Eurogout samples were genotyped using the Illumina CoreExome v24 bead chip array (547,644 markers), the HPF/NHS samples using the Illumina 1M BeadChip and the UK Biobank samples using an Affymetrix Axiom array (820,967 markers). UK Biobank genotypes had been imputed to a bead chip array (547,644 markers), the HPFS/NHS samples using the Illumina 550 bead chip. The NZ/Eurogout samples were genotyped using the Illumina 660 chip.

Results: There were seven loci with genome-wide significant (P<5x10^{-8}) evidence for association with gout: SLCA29 (OR=1.67), CDC20R (OR=1.72), CCXKR (OR=1.24), SLCA211 (OR=1.39), SLCA214 (OR=1.20), PDZK1 (OR=1.14), TRIM66 (OR=1.18).

Conclusions: All seven loci have been previously associated with serum urate levels in GWAS. Our data emphasise the relative importance of genetic control of serum urate, compared to the genetic control of MSU crystal formation or the innate immune response, in determining risk of gout.

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