WEDNESDAY, 12 JUNE 2019

CPPD – a forgotten disease that requires more attention??!!!

OP0003 CALCIUM PYROPHOSPHATE CRYSTAL DEPOSITION IN A COHORT OF 52 PATIENTS WITH GITELMAN SYNDROME

Emilie Chotard[1], Anne Blanchard[2], Gilles Gailly[1], Rosa Vargas Poussou[3], Agnès Ostertag[4], Hang Korng Ea[1,4]. [1]*APHP – Lariboisière Hospital, Rheumatology department – Viggo Petersen centre, Paris, France*; [2]*APHP – Georges Pompidou European Hospital, Nephrology department, Paris, France*; [3]*APHP – Georges Pompidou European Hospital, Department of Genetics, Paris, France*; [4]*University Paris Diderot, INSERM UMR1132 – Bioscar, Paris, France*

Background: Gitelman syndrome (GS) is a rare recessively inherited tubulopathy, caused by inactive mutations in *SLC12A3* gene encoding the thiazide-sensitive-sodium-chloride transporter. It is characterized by an hypokalemic metabolic alkalosis with hypomagnesemia and hypocalciuria. Calcium pyrophosphate (CPP) crystal deposition is frequently described in GS case-reports but its prevalence and clinical phenotype are unknown.
Objectives: The aim is to describe clinical, biological and radiological features of CPP in a cohort of patients with genetically proven GS.
Methods: All patients (pts) with genetically proven GS in the French national reference center of rare diseases were proposed to have a consultation with a senior rheumatologist. Demographic data, history of joint pain and flare and biology disorders were recorded. Other causes of CPP disease were systematically ruled out. CPP crystal deposition was assessed by X-rays (all peripheral joints and cervical spine) and ultrasonography (US) (wrist, knee, ankle joints and symptomatic joints). Patients with history of cervical pain underwent computed tomography (CT) of the full cervical spine from occipital bone to C1-T1 disk, including temporomandibular joints.
Results: Fifty-two GS pts (21 men, mean age 46.5± 12.2 years) have been examined by a rheumatologist. Almost all patients had an heterozygous mutation on SLC12A3 gene. Forty-four pts experienced joint pain (84.6%), 23 joint flares (44,2%) and 25 cervical pain (48.1%). X-rays were performed in 42 pts, US in 38 and CT in 23. CPP depositions were observed in 36 (85.7%), 27 (71.1%) and 15 pts (65.2%) by X-rays, US and CT, respectively. All techniques combined, chondrocalcinosis was discovered in 42 patients. Deposits occurred in knees (n=32), wrists (n=29), cervical spine (n=23), ankles and feet (n=22) and shoulders (n=16). CPP depositions were widespread involving at least 3 joints in 27 (55.1%) pts. In knees, CPP depositions involved menisci (n=24), hyaline cartilages (n=16) and ligament or joint capsule (n=15). Cervical spine CT demonstrated CPP deposition in vertebral discs (n=17), transverse ligament (n=13), other ligament (n=13), vertebral facets (n=3) and temporomandibular joints (n=5).
Patients with CPP crystal deposition in more than 3 joints were significantly older (52.8±10.5 years) than patients with 2 or 3 affected joints (40.8±11.6 years, p=0.02) or patients without any affected joint (36.6±8.1 years, p=0.001). They were also more symptomatic with significantly more joint flares (p<0.0001). Magnesemia was inversely correlated with the number of affected joints: patients with >3 or 2-3 affected joints had a significantly lower magnesemia (0.57±0.1 and 0.59 ±0.1 mM, respectively) than patients with only 1 affected joint (0.83±0.1 mM). CPP crystal deposition was not associated with potassium level.

Table 1. Patients characteristics

Male sex, n (%)	21 (40.4)
Mean age ± SD (years)	46.5± 12.2
Heterozygous mutation on SLC12A3 gene, n (%)	36 (69.2)
Arthralgia, n (%)	44 (84.6%)
Recurrent joint flares, n (%)	23 (44.2%)
Cervicalgia, n (%)	25 (48.1%)
Kaliemia at GS diagnosis, mean ± SD (mM)	2.7± 1.1
Magnesemia at visit, mean ± SD (mM)	0.6± 0.3
Calcemia at visit, mean ± SD (mM)	2.4± 1.0

Conclusion: CPP crystal deposition occurred in more than 80% of patients with GS, was widespread and often symptomatic. The most affected sites were wrists, knees and the cervical spine. CPP crystal deposition was associated with long-standing GS, older age and lower serum magnesium level. Further studies are necessary to understand how GS favors CPP crystal deposition.
Disclosure of Interests: None declared
DOI: 10.1136/annrheumdis-2019-eular.3828

OP0004 IS DUAL-ENERGY COMPUTED TOMOGRAPHY ABLE TO IDENTIFY EARLY-STAGE CALCIUM CRYSTAL DEPOSITION IN VIVO? INITIAL CLINICAL EXPERIENCE IN 132 PATIENTS WITH AND WITHOUT KNEE CHONDROCALCINOSIS

Tristan Pascart[1], Claire Marzin[1], Laurène Norberciak[1], Julie Legrand[1], Fabio Becce[2], Jean-François Budzik[1]. [1]*Saint-Philibert Hospital, Lille, France*; [2]*CHUV Lausanne, Lausanne, Switzerland*

Background: Calcium crystals are below the spatial resolution limit of currently available imaging techniques, and only aggregates can be identified in vivo at more advanced stages of the disease. Although dual-energy computed tomography (DECT) has the potential to discriminate the various calcium crystal types owing to its biochemical signature assessment capabilities, it remains to be seen whether this technique would be able to identify early-stage calcium crystal deposition in vivo.
Objectives: We aimed to assess whether DECT was able to identify calcium crystal deposition in the knee prior to the onset of chondrocalcinosis (CC), more specifically if DECT attenuation properties differed between patients with CC and controls without CC on DECT.
Methods: Consecutive patients with clinical suspicion of crystal arthritis and knee DECT scans were retrospectively reviewed and assigned to either CPPD (n=50) or control (n=82) groups depending on the presence/absence of CC on DECT. 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. The presence or absence of CC in these predefined ROIs were noted. Five DECT parameters were obtained: CT numbers (HU) at 80 and 140 kV, dual-energy index (DEI), electron density (ρe), and effective atomic number (Zeff). Knee zones were compared between groups using mixed linear models adjusting for age and the presence of osteoarthritis. A subgroup analysis was performed excluding zones were calcifications were visible on DECT images.
Results: Menisci from CPPD patients and controls had a mean Zeff of 7.9±0.4 and 7.6±0.2 (p<0.0001), mean ρe of 85±23 and 74±14 (p<0.0001) and mean DEI of 0.0036±0.0046 and -0.0001±0.0042 (p<0.001), respectively. DEI values differed significantly between patients and controls in tibiofemoral cartilage (0.0026 ±0.0041 in CPPD and 0.0023±0.0045)(p=0.013) but not in patellofemoral cartilage (p=0.57). When considering only the various regions from CPPD patients without CC in the selected ROIs, the ρe in menisci (n=79/185) did not differ between groups and differences in Zeff (p=0.15) and DEI (p=0.09) did not reach statistical significance after adjustment for age and osteoarthritis.
Conclusion: DECT has the potential to discriminate between meniscal fibrocartilage and articular cartilage of CPPD patients and controls in predefined regions of interest. DECT's ability to improve the sensitivity of conventional CT to identify invisible CPP deposits remains unclear as the trend did not reach statistical significance.
Disclosure of Interests: None declared
DOI: 10.1136/annrheumdis-2019-eular.7383

WEDNESDAY, 12 JUNE 2019

Comorbidities in psoriatic arthritis

OP0005 INCIDENCE OF OVERALL AND SITE-SPECIFIC CANCERS IN TNF INHIBITOR TREATED PATIENTS WITH PSORIATIC ARTHRITIS: A POPULATION-BASED COHORT STUDY FROM 4 NORDIC COUNTRIES

Christine Ballegaard[1,2], Karin Hellgren[3], René Cordtz[1,2], Bénédicte Delcoigne[3], Björn Gudbjornsson[4,5], Thorvardur Jon Love[5], Kalle Aaltonen[6], Dan Nordström[7], Sella Aarrestad Provan[8], Johan Askling[3], Kristian Zobbe[1,2], Lars Erik Kristensen[1], Lene Dreyer[9,10]. [1]*Bispebjerg and Frederiksberg Hospital, The Parker Institute, Frederiksberg, Denmark*; [2]*Rigshospitalet – Gentofte, Centre for Rheumatology and Spine Diseases, Copenhagen, Denmark*; [3]*Karolinska Institute, Clinical Epidemiology Division and Department of Medicine Solna, Stockholm, Sweden*; [4]*National University Hospital of Iceland, Centre for Rheumatology Research, Reykjavik, Iceland*; [5]*University of Iceland, Faculty of Medicine, Reykjavik, Iceland*; [6]*Ministry of Social Affairs and Health, Helsinki, Finland*; [7]*ROB-FIN, Helsinki University Hospital and Helsinki University, Department of Medicine, Helsinki, Finland*; [8]*Diakonhjemmet Hospital, Department of Rheumatology, Olso, Norway*; [9]*Aalborg University and Aalborg University Hospital, Aalborg, Denmark*; [10]*DANBIO, Nationwide, Denmark*

Background: Tumour necrosis factor inhibitors (TNFi) effectively reduce inflammation in Psoriatic arthritis (PsA). However, a possible association between treatment with TNFi and an increased cancer risk has previously been suggested.