Arenzano, Italy; Diagnostic and Interventional Radiology, Lausanne, Switzerland; United States of America

The striking difference of kappa of 0.41–0.60 as moderate, 0.61–0.80 as substantial, and 0.81–1.00 as almost perfect agreement.

Table 1. kappa values for intra- and inter-reader agreement. Values from 0.01–0.20 are considered as none to slight agreement, 0.21–0.40 as fair, 0.41–0.60 as moderate, 0.61–0.80 as substantial, and 0.81–1.00 as almost perfect agreement.

<table>
<thead>
<tr>
<th>Assessors</th>
<th>Medial meniscus</th>
<th>Lateral meniscus</th>
<th>Hyaline cartilage</th>
<th>Quadriceps tendon</th>
<th>Patellar tendon</th>
<th>Capsule/ synovia</th>
<th>Meniscal cartilage joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-reader</td>
<td>0.67</td>
<td>0.71</td>
<td>0.34</td>
<td>0.47</td>
<td>NA</td>
<td>0.37</td>
<td>0.40</td>
</tr>
<tr>
<td>Intra-reader</td>
<td>0.67</td>
<td>0.90</td>
<td>0.86</td>
<td>0.65</td>
<td></td>
<td>NA</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Conclusion: CR has been extensively used for diagnosis of OA and CPPD. The results of our study raise some concerns on the reliability of CR in identification of CPPD. Assessment of calcium crystals at the meniscal level should be used for identification of CC as other sites of the knee seem to present low reliability.

REFERENCES:

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1438

POS1134

COMPARATIVE ANALYSIS OF THE CLINICAL AND LABORATORY PROPERTIES OF GOUT, OSTEOARTHRITIS, AND CALCIUM PYROPHOSPHATE DEPOSITION DISEASE

D. Kravchenko1, R. Bergner2, C. Behning3, V. Schäfer4 1University Hospital Bonn, Department of Diagnostic and Interventional Radiology; Bonn, Germany; 2Klinikum Lüdwigsafen, Medical Clinic; A. Clinic for Internal Medicine, Hematology, Nephrology, Infektology and Rheumatology, Lüdwigsafen, Germany; 3University Hospital Bonn, Institute for Medical Biometrics, Informatics and Epidemiology (IMBIE), Bonn, Germany; 4University Hospital Bonn, Clinic of Internal Medicine III, Hematology, Oncology, Rheumatology and Clinical Immunology, Bonn, Germany

Background: The clinical differentiation between gout, osteoarthritis (OA), and calcium pyrophosphate deposition disease (CPPD) still remains a hurdle in daily practice without imaging or arthrocentesis. Although a plethora of clinical data exists, reliable predictor biomarkers for all but gout are still missing.

Objectives: To explore an association between common physical examination, ultrasound and laboratory findings and gout, OA, and CPPD, which can in turn provide reliable diagnostic predictions.

Methods: 277 patients were retrospectively analysed using ANOVA with Scheffe’s post hoc tests and conditional inference trees regarding biomarkers such as age, sex, body mass index, hypotension, renal status, cumulative affected joint size, number of afflicted joints, double contour sign, intracartilaginous double contour sign, degree of vascularization on ultrasound (DoV), uric acid, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), ferritin, and leukocyte count. Simple linear regressions were carried out to explore associations between increased inflammatory parameters and the above-mentioned biomarkers. Statistically significant associations were defined as p values < 0.05.

Results: The male sex was associated with gout (p value < 0.05 vs OA), OA affected younger patients than CPPD (mean 64.5 vs 73.1 years, p < 0.05), Hypertension was correlated with gout (p < 0.05) and CPPD (p < 0.05), impaired renal status with gout when compared to OA (p < 0.05) but not compared to CPPD (p 0.21). A higher number of involved joints was associated with gout (mean 2.2 joints) compared to OA (10, p < 0.05) and CPPD (p = 0.01). The double contour sign was not able to differentiate gout and CPPD with a sensitivity/specificity of 71%/55% for gout and 99%/99% for CPPD. The intracartilaginous double contour sign was specific for CPPD (99%) but with a low sensitivity of 26%. DoV was significantly associated with gout (vs OA, p < 0.05) and CPPD (vs OA, p < 0.05). Unsurprisingly, uric acid was associated with gout while ESR and CRP were increased in gout and CPPD, but not in OA. Some associations were statistically significant but arguably clinically unimportant. Conditional inference trees were able to exclude OA (specificity 97.5%) and CPPD (specificity 94.0%) as possible differentials based on just uric acid, CRP, hypertension,
and sex, and diagnose gout with a sensitivity of 95.1%, summarized in Figure 1. Linear regressions demonstrated an elevated CRP response in people suffering from type II diabetes, higher cumulative joint points score, number of affected joints, as well as elevated uric acid, ESR, and leucocyte count.

Conclusion: Gout can be reliably diagnosed, simultaneously excluding OA and CPPD as differential diagnoses by conditional inference trees using just four biomarkers. A correlation between inflammatory reaction severity based on CRP levels was found in patients suffering from type II diabetes, more or larger joint involvement and elevated uric acid levels. The double contour sign remains a questionable differentiator between gout and CPPD with a sensitivity/specifity of 71%/55% for gout and 59%/39% for CPPD, similar to findings reported by Löffler et al (1) with a sensitivity/specifity of only 64%/52% for gout.

REFERENCES:

Disclosure of Interests: Dmitri Kravchenko Shareholder of: Pfizer, Raoul Bergner: None declared, Charlotte Behnking: None declared, Valentin Schäfer Speakers bureau: AbbVie, Novartis, BMS, Chugai, Celgene, Medac, Sanofi, Lilly, Hexal, Pfizer, Janssen, Roche, Schire, Onkowissen, Royal College London, Con- sultant of: Novartis, Chugai, AbbVie, Celgene, Sanofi, Lilly, Hexal, Pfizer, Amgen, BMS, Roche, Gilead, Medac, Grant/research support from: Novartis, Hexal, Lilly, Roche, Celgene, Universität Bonn.

DOI: 10.1136/annrheumdis-2021-eular.1855

POS1135 MONOSODIUM URATE CRYSTALS REDUCE SCHWANN CELLS VIABILITY

Y. Liu1, Y. Huang2, S. Sun3, W. Deng1, T. W. Li1. 1Guangdong Second Provincial General Hospital, Department of Rheumatology and Immunology, Guangzhou, China; 2University of South China, 2University of Guangzhou, Guangdong Second Provincial General Hospital, Guangzhou, China

Background: The prevalence of peripheral neuropathy in patients with gout almostly reaches 25%[1]. Demyelination caused by Schwann cell (SCs) injury and apoptosis is the major pathological feature of peripheral[2]. None of study has focused on the effects of monosodium urate (MSU) crystals on SCs.

Objectives: To assess the effect of MSU crystals on SCs.

Methods: Mouse-derived Schwann cells (RSC96) are stimulated with different concentrations of MSU crystals (0mg/ml,0.25mg/ml,0.5mg/ml) and time (24h,48h,72h). The migration ability of Schwann cells is evaluated by acratch assay, the proliferation level is assessed by the cell counting kit-8 (CCK-8) assay, and the apoptosis rate is detected by flow cytometry.

Results: The acratch assay showed that the migration ability of SCs was worsened, CCK-8 assay suggested that proliferation of SCs was reduced in a dose-dependent manner (P<0.05). According to the result of flow cytometry, the survival rate of SCs at 0.5mg/ml(78.60±2.26%) was lower than that of 0.25mg/ ml(87.50±0.95%) and 0mg/ml (98.80±0.26%)(P<0.05) at 24h. When the stimula- tion time increased to 72h, the survival rate of 0.5mg/ml(47.90%±11.70%) dropped significantly, which was significantly different from the other two groups(P<0.05).

Conclusion: MSU crystals can cause damage to Schwann cells. It may help to explain the reason of peripheral neuropathy in gout patients.

REFERENCES: