factors on QoL in IBD patients with and without arthropathies, prospectively over 1 year.

Methods: In total, 181 IBD patients were questioned about joint pain. At baseline, 135 patients (77% Crohn’s disease (CD), 34% male) had arthropathies (daily back pain for ⩾3 months and/or peripheral joint pain and/or joint swelling during the last year), another 46 patients (74% CD, 50% male) who had no arthropathies served as controls. QoL was assessed by the shortIBDQ and SF-36 (physical (PCS) and mental (MCS) component summary scores). Harvey–Bradshaw Index (HBI) and Simple Clinical Colitis Activity Index (SCCAI) were used to measure IBD activity (active disease if HBI/SCCAI >4). Disease activity and (nocturnal) pain, back and peripheral joints, were scored (11-point numerical rating scale [NRS]). The self-administered questionnaires were assessed every 3 months. Uni- and multivariate (linear mixed model) analyses were performed to investigate which variables (age, gender, type of IBD, IBD duration, IBD activity, 6 NRS scores, smoking and employment) were associated with QoL. Variables with a p < 0.20 were included in multivariate analyses. Because of the strong correlation between the 6 NRS scores, we included 2 of 6 scores in the multivariate analyses.

Results: The mean age and mean IBD disease duration of all patients (n = 181) were 43.6 ± 13.7 and 15.6 ± 11.1 years, respectively. Multivariate analysis showed that an increase in NRS of disease activity back and peripheral joints and IBD activity were independently negatively associated with shortIBDQ (all p < 0.001). Increased IBD duration and employment were independently positively associated with shortIBDQ (both p < 0.05). Back and peripheral joint pain, IBD activity and unemployment were independently negatively associated with PCS (all p < 0.001). Disease activity of peripheral joints and IBD were independently negatively (both p < 0.001), and employment and age independently positively associated with MCS (both p < 0.05).

Conclusions: An increase in severity of back and peripheral joint pain, disease activity of the back and peripheral joints and IBD activity are independently negatively associated with QoL in IBD patients. Furthermore, employment, increased IBD duration and age are independently positively associated with QoL.

P165

Pseudotumoral colonic form of Crohn’s disease: a series of 16 cases

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Background: Pseudotumoral colonic or rectal form of Crohn’s disease is a rare entity. Preoperative diagnosis is very difficult. The diagnosis is usually based on the pathological examination of the surgical specimen.

Aim: Assessing the frequency, circumstances of diagnosis and management of pseudotumoral form of Crohn’s disease.

Methods: We have conducted a retrospective chart review of patients who were admitted to hospital for Crohn’s disease over six years (2005–2011). Only patients with pseudotumoral form of Crohn’s disease were included.

Results: Over the 6-year period, 387 cases of Crohn’s disease were reviewed. Sixteen patients with pseudotumoral form inaugurating Crohn’s disease were included. The prevalence of this form was 2%. There were 9 males and 7 females. Mean age was 43 years (14–65 years). Obstruction and pseudo-obstruction were the presenting symptoms of the disease in respectively 9 and 3 patients. Fever and acute right iliac fossa pain were identified in 4 patients. In patients who were operated on immediately, the per-operative diagnosis was right colonic tumor (9 cases). The remaining patients were investigated with colonoscopy and CT scanner and were diagnosed with colonic or ileal tumors, nevertheless biopsies were negative. In the latter patients surgery was referred to for diagnostic and therapeutic aim. Diagnosis of pseudotumoral form of Crohn’s disease was made only on the basis of the pathology examination of the surgical specimen.

Conclusions: Pseudotumoral form of Crohn’s disease is extremely rare. Despite the improvement of morphological investigation, definitive diagnosis could be made only after pathological examination of the surgical specimen.

P166

Prospective evaluation of faecal tumour pyruvate kinase type M2 (M2-PK) in comparison to calprotectin in IBD patients

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Background: Determination of faecal concentration of the neutrophil granulocyte-derived protein calprotectin is a validated, non-invasive marker for the diagnosis, management and follow-up of patients with inflammatory bowel disease (IBD). Some recent studies have demonstrated test characteristics of the dimeric isoenzyme of pyruvate kinase, termed M2-PK, to make it possibly more appropriate for use as a marker of intestinal inflammation than for colorectal cancer screening. This first study comparing these two markers in patients with IBD.

Methods: 223 consecutive patients (125 female, 98 male), suffering from IBD and undergoing follow-up in our department, provided stool samples for the determination of M2-PK and calprotectin. These tests were performed using a commercial ELISA (Immundiagnostik, Germany) for calprotectin and a sandwich ELISA (ScheBo Biotech AG, Germany) for M2-PK. In addition, disease activity was assessed clinically and endoscopically. Technicians carrying out the tests were unaware of the patients’ clinical profile.

Results: Patient and performance characteristics are presented in Tables 1 and 2.

Table 1. Patient characteristics for the two tests

<table>
<thead>
<tr>
<th>Diagnosis (No.)</th>
<th>Faecal calprotectin</th>
<th>Faecal M2-PK</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC (71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active (50)</td>
<td>46</td>
<td>42</td>
</tr>
<tr>
<td>Inactive (21)</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>CD (152)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active (102)</td>
<td>98</td>
<td>93</td>
</tr>
<tr>
<td>Inactive (50)</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 2. Performance characteristics of tests

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Type of IBD</th>
<th>Faecal calprotectin</th>
<th>Faecal M2-PK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity (%)</td>
<td>UC</td>
<td>92.0 (80.8–97.8)</td>
<td>84.0 (70.9–92.8)</td>
</tr>
<tr>
<td>specificity (%)</td>
<td>CD</td>
<td>96.1 (90.3–98.9)</td>
<td>91.2 (83.9–95.9)</td>
</tr>
<tr>
<td>PPV (%)</td>
<td>UC</td>
<td>90.5 (69.6–98.8)</td>
<td>66.7 (43.0–85.4)</td>
</tr>
<tr>
<td>NPV (%)</td>
<td>CD</td>
<td>95.8 (85.5–99.5)</td>
<td>85.7 (72.8–94.1)</td>
</tr>
<tr>
<td>PPV (%)</td>
<td>UC</td>
<td>95.2 (89.0–98.4)</td>
<td>82.3 (74.0–88.8)</td>
</tr>
<tr>
<td>NPV (%)</td>
<td>UC</td>
<td>82.6 (61.2–95.1)</td>
<td>63.6 (40.7–82.8)</td>
</tr>
<tr>
<td>CD</td>
<td>91.8 (80.4–97.7)</td>
<td>76.9 (60.7–88.9)</td>
<td></td>
</tr>
</tbody>
</table>

Value in brackets indicate confidence interval.

Conclusions: Our preliminary study indicates faecal calprotectin to have significantly better performance characteristics in comparison to faecal M2-PK. M2-PK was found to be a
poor marker for the monitoring and follow-up of IBD patients. However, further studies are required on this topic.

**P167**

**Proposal of a modified phenotype-based radiological classification: the magnetic resonance Crohn’s disease severity index (MR- CSI)**

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**Background:** Crohn’s disease (CD) is a chronic inflammatory bowel disease, with different clinical features and pathological course, characterized by a relapsing and remitting trend. We worked out a radiological score in the assessment of Crohn’s disease activity and severity.

**Methods:** From July 2011 to February 2012, 46 patients with suspected or established Crohn’s disease underwent small bowel MRI on a 3T scanner. According to radiological findings and disease behaviour phenotype (as proposed in the Montreal classification), patients were divided into 5 classes:

1. absence of disease
2. disease activity (presence of one of following findings: mucosal abnormalities, submucosal edema, mucosal enhancement)
3. presence of stenosis without obstruction
   a. active disease
   b. inactive disease
4. presence of stenosis with obstruction
   a. active disease
   b. inactive disease
5. extramural involvement (fistulas and/or abscess)

Data were correlated with endoscopical findings, CDAI, CRP and ESR.

**Results:** A significant correlation \((r = 0.88, p < 0.001)\) was registered between endoscopical findings and MR score. A good correlation of MRI-CSI was observed with CDAI \((r = 0.59, p < 0.01);\) correlation was superimposable \((r = 0.59, p < 0.01)\) and CRP \((0.47, p = 0.001)\). Correlation appears higher if subgroups were divided into active/ non active disease. A moderate correlation of MR-CSI was observed with ESR \((0.49, p = 0.001)\) and CRP \((0.47, p = 0.001)\). Correlation appears higher if active disease was divided into active/inactive disease \((0.66 and 0.59)\) respectively.

**Conclusions:** MR-CSI is a quick, manageable score, easy to apply in daily practice; furthermore, MR can be used in the evaluation of CD as an alternative to ileocolonoscopy.

**P168**

**Primary sclerosing cholangitis in the Swiss IBD cohort study: prevalence, patient characteristics, and disease course**

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**Background:** Primary sclerosing cholangitis (PSC) represents the most common hepatobiliary extraintestinal manifestation (EIM) in inflammatory bowel disease (IBD). We aimed to assess the prevalence of PSC in the Swiss IBD Cohort Study (SIBDCS) and to identify associated risk factors.

**Methods:** Patients were enrolled retrospectively (diagnosis before 2006) and prospectively (diagnosis in 2006 and later) into the SIBDCS. Eighty percent of patients were recruited in hospital clinics and 20% in private practice. Patients with IBD and PSC were compared to patients with IBD but without PSC. Non parametric data are presented as median and interquartile range [IQR].

**Results:** Among 2,187 patients with IBD (1,251 Crohn’s disease, CD; 893 ulcerative colitis, UC; 43 indeterminate colitis, IC), diagnosed between 1955 and 2010, 35 patients with PSC were identified (29 PSC-UC, 6 PSC-CD). The cumulative PSC prevalence was 3.2% in UC and 0.5% in CD \((p < 0.001)\) for PSC-UC vs. PSC-CD). PSC was significantly more prevalent in males as compared to females \((risk\ ratio\ 2.82, p = 0.006)\). UC-PSC patients had a median age at IBD disease onset of 23 \([19–35]\) years, the median disease duration was 11 \([4–17]\) years, and disease location was in 10.7% proxitis, 21.4% left sided colitis, 10.7% extensive colitis, and in 57.1% pancolitis. Mean age at PSC diagnosis was 30 years in males and 38 years in females. When comparing UC-PSC patients \((n = 29)\) with UC patients without PSC \((n = 864)\) we observed the following correlations: UC-PSC patients were more frequently male \((79.3\% vs. 54.2\%, p = 0.007)\), and they were younger at UC diagnosis \((median\ 23\ [19–35] vs. 31\ [24–41]\ years, p = 0.005)\). Pancolitis was found in 57.1% of UC-PSC patients compared to 40.6% of UC patients without PSC \((p = 0.117)\). PSC was diagnosed in 71.4% after IBD, in 14.3% at the same time, and in 14.3% before IBD diagnosis \((3.6\% \text{ missing information})\). Four patients \((11.4\%)\) developed cholangiocarcinoma. Four patients were liver transplanted due to recurrent episodes of cholangitis and/or liver failure.

**Conclusions:** The prevalence in the SIBDCS is comparable to other cohorts from the United States and Europe. We identified male gender and young age at IBD diagnosis as risk factors for PSC in UC patients.

**P169**

**Prevalence of vitamin D deficiency in IBD patients and its correlation with disease activity**

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**Background:** Inflammatory bowel diseases (IBD) are chronic relapsing immune mediated diseases with unclear aetiology. Vitamin D is a fat soluble secosterol produced in the skin after the sun exposure with potent immunomodulatory activities. The high prevalence of IBD in North America and Europe, genetic analyses and animal studies implicate vitamin D status as a possible environmental factor that contributes to IBD development. The aim of this study was to determine the vitamin D status in a group of IBD patients and to analyse the correlation of vitamin D and disease activity.

**Methods:** The cohort consisted of 68 patients with Crohn’s disease (CD) and 38 patients with ulcerative colitis (UC) followed up in the IBD centre of University Hospital Bratislava-Ruzinov between January 1st and September 30th 2010. In every patient clinical characteristic were determined. Further we measured the level of serum 25(OH)-vitamin D, CRP, ERS and semi quantitative stool calprotectin level. Quality of life was assessed by means of the short IBD quality of life questionnaire (sIBDQ). Prevalence of 25(OH)-vitamin D deficiency \((<30\ ng/ml),\ severe\ 25(OH)-\text{vitamin D deficiency}\ (<10\ ng/ml)\) and its association with disease activity parameters (ERS, CRP, calprotectin, sIBDQ) was analysed.

**Results:** 25(OH)-vitamin D deficiency was noted in 103/106 (97.2%), severe 25(OH)-vitamin D deficiency in 22/106 (20.7%) of IBD patients. There was a higher prevalence of severe 25(OH)-vitamin D deficiency in patients with CD \((17/68, 25\%)\) compared to UC \((5/35, 14.2\%), p = 0.03\). There was a significant difference in CRP levels \((15.0 \pm 21.1\ vs. 7.6 \pm 15.9\ \text{mg/L}, p = 0.03)\) and sIBDQ \((52.3 \pm 12.1\ vs. 58.3 \pm 8.3, p = 0.03)\) between severe 25(OH)-vitamin D deficient and non-severely deficient Crohn’s disease patients. There was a significant negative