most of them in line with the ASAS referral recommendations [1] and with a similar performance – about 30-40% of the referred patients can be diagnosed with axSpA after examination by a rheumatologist. In addition to physician-based strategies, an online self-referral (OSR) strategy has been recently proposed and evaluated about 20% of the patients being diagnosed with axSpA after rheumatologic evaluation [2].

Objectives: The objective of the current analysis was to investigate the role of age and symptom duration for the optimization of a physician-based and an OSR strategy for axSpA.

Methods: In the OptiRef study, patients with chronic back pain and suspicion of axSpA either referred by primary care physicians /orthopedists using the Berlin referral tool (=physician based) or based on a referral recommendation of an OSR were evaluated by rheumatologists in a specialized center [2]. All patients underwent a structured examination including imaging that resulted into the final diagnosis of axSpA or no axSpA. The relationship between age, symptom duration and the likelihood of axSpA diagnosis was evaluated in this analysis.

Results: A total of 360 patients (180 presented via the OSR and 180 referred by the physician based referral strategy) were included in this analysis. Patient's characteristics are shown in Table 1. A total of 71 patients (39.4%) in the physician-based group and 35 patients (19.4%) in the OSR group were finally diagnosed with axSpA. The heatmaps depicting the relationship between the proportions of patients diagnosed with axSpA and age plus symptom duration (Figure 1) showed a clear decline of the axSpA probability with increasing age. In the physician-referred group, however, axSpA was diagnosed even in patients who were above 50 years at the time-point of the examination, while there were only few patients with axSpA in the self-referred group aged 40-49 years, and none in the age group ≥ 50 years. Interestingly, there was no clear relationship between symptom duration and probability of the diagnosis: axSpA was diagnosed in a substantial proportion of patients even with a long history of back pain (>12 years) in both subgroups.

Conclusion: The probability of axSpA is high in patients suffering from back pain and aged <40 years with a substantial decline thereafter. Therefore, a referral strategy based on self-evaluation of symptoms should be more focused on a younger patient population, while physician-based strategies do not require such a restriction.

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Table 1. Patient characteristics

	Total N=360	Berlin tool N=180	Self-referral N=180	p-value
Diagnosis of axial SpA, n (%)	106 (29.4%)	71 (39.4%)	35 (19.4%)	<0.0001
Age, years, mean (SD)	36.9 (10.4)	37.2 (11.5)	36.6 (9.2)	>0.99
Male sex, n (%)	177 (49.2%)	100 (55.6%)	77 (42.8%)	0.02
Back pain duration, years, mean (SD)	7.9 (7.6)	6.5 (6.9)	9.2 (8.1)	<0.0001
HLA-B27 positive, n (%)	141 (40.9%)	104 (59.8%)	37 (21.6%)	<0.0001
CRP elevation, n (%)	52 (14.8%)	34 (19.4%)	18 (10.2%)	0.02
Inflammatory back pain, n (%)	204 (56.7%)	103 (57.2%)	101 (56.1%)	0.92

Figure 1. Heatmaps depicting the proportions of patients diagnosed with axSpA in relation to age and symptom duration in the physician-based (A) and OSR (B) groups.

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THE ROLE OF SERUM CALPROTECTIN IN THE DIAGNOSIS OF INFLAMMATORY BOWEL DISEASE IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) and inflammatory bowel diseases (IBD) have many common features. Approximately one in two patients with axial spondyloarthritis have subclinical (histologically confirmed) inflammation of the intestine, and 5-10% of subclinical inflammation turns into Crohn's disease (CD) or Ulcerative colitis (UC) [1]. Colonoscopy is usually used to diagnose IBD, but this procedure is invasive. Laboratory biomarkers, as fecal calprotectin (FC) and serum calprotectin (SC) can be used to diagnosis of IBD. But there is no consensus regarding SC clinical utility. SC is exposed to proteolytic enzymes, but its level also increases with inflammation in the intestine and is associated with a higher disease activity [2]. SC levels positively correlate with CRP, ESR, disease activity in AS, but not as obvious as with FC [3,4].

Objectives: The aim of this study was to evaluate the possibility of using SC in the diagnosis of IBD in patients with AS.

Methods: In the analysis were included 50 patients with AS, fulfilling the modified New York criteria, among them man -36 (72%), woman -14 (28%), mean age of patients was 42.5 $\pm$ 9.9, mean disease duration – 13.4 $\pm$ 8.7 years. All patients were examined with ESR, CRP, FC (range: 100-1800 μ g/g), esophagogastroduodenoscopy, colonoscopy and quantitative analysis of the SC level using ELISA (BUHLMANN MRP8/14 ELISA, range: 0.4-3.9 μ g/ml).

Results: All patients had a high disease activity, mean BASDAI was 5.3 $\pm$ 1.8, mean ASDAS CRP 3.7 $\pm$ 1.01, mean ASDAS ESR 3.6 $\pm$ 1.01. 80 % patients had high FC level (more than 100 μ g/g), while only 18% patients had an increase of SC level. IBD were diagnosed in 11 cases: 6 patients (12 %) with CD and 5 patients (10 %) - UC, in the remaining cases (78%) was no intestinal pathology. Only 2 patients with IBD had a high SC level. SC level was more correlated with ESR ($r=0.5$) and CRP ($r=0.5$) ($p < 0.05$) levels, than with FC level ($r=0.4$) ($p < 0.05$).

Conclusion: The results showed that there is currently insufficient data to assess the possibility of using SC in the diagnosis of IBD in patients with AS. There is a significant association between the SC, CRP and ESR, but not fecal calprotectin. Potentially SC may be more representative of systemic inflammation than an intestinal inflammation.

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