Gastrointestinal and Hepatic Disease in Spondyloarthritis

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KEYWORDS

• Spondyloarthropathies • Psoriatic Arthritis • Ankylosing Spondylitis
• Digestive system • Gastrointestinal diseases • Liver diseases

KEY POINTS

- Inflammatory bowel disease represents the most frequently encountered and well-described gastrointestinal manifestation of spondyloarthritis, affecting approximate 7% of axial spondyloarthritis clinically, with subclinical disease rates approaching 65%.
- Strong genetic and pathophysiologic associations have been identified between inflammatory bowel disease and spondyloarthritis, buoyed by recent intestinal microbiome studies.
- Nonalcoholic fatty liver disease (NAFLD) appears more frequently in psoriasis and psoriatic arthritis compared with the general population; the choice of therapies for psoriasis and psoriatic arthritis should reflect this association with NAFLD.

INTRODUCTION

Spondyloarthritis (SpA) refers to a collection of pathophysiologic and genetically related disorders whose manifestations co-occur in affected individuals. The manifestations include inflammatory arthritis of the axial skeleton and enthesitis as well as inflammatory disease of the eyes, skin, and gastrointestinal (GI) tract. Historically, SpA has primarily included ankylosing spondylitis (AS), reactive arthritis, psoriatic arthritis, undifferentiated arthritis, and enteropathic-associated arthritis (EAA; or inflammatory bowel disease [IBD]–associated arthritis), with the inclusion of SAPHO syndrome (synovitis, acne, pustulosis, hyperostosis, osteitis), uveitis, IBD, and psoriasis (all without arthritis) by some investigators.

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Rheum Dis Clin N Am 44 (2018) 153–164
https://doi.org/10.1016/j.rdc.2017.09.004
0889-857X/18/Published by Elsevier Inc.

For well more than 100 years, inflammatory arthritis has been associated with intestinal abnormalities, as physicians debated the pathophysiologic bases of these diseases. In the minutes of the British Medical Association's meeting for 1901, Dr EJ Cave reported "a case of rheumatoid arthritis produced by infection from a case of severe rectal ulceration."[1] In the decade that followed, several physicians and scientists began to explore the interaction of digestion and arthritis, some attributing the arthritis to diet,[2] GI infections, or an intestinal toxemia with "lasting and crippling lesions appearing only when the [primary microbic] infection, however slight, has long since subsided."[3] Interestingly, Dr Rea Smith[4] conjectured in 1922 that chronic arthritis deformans (ie, inflammatory arthritis) has its origin in "unbalanced or perverted intestinal flora," though he attributed the imbalance to local infections resulting from anatomic variations of the intestines.[4]

When inflammatory arthritis/SpA and IBD coincide, the disorder is frequently referred to as EAA. This entity has had many naming conventions but was clinically recognized at least as early as 1929 and pathologically described in the 1950s.[5,6]

EPIDEMIOLOGY

Spondyloarthritis

Estimates for the prevalence of SpA vary between 0.5% and 2.0% of the population (500 cases per 100,000 population).[7] Divergences in these values no doubt reflect differences in the selected disorders, their case definitions/classification criteria (which have changed over time), as well as underlying difference in the genetic and environmental forces responsible for the onset of disease. Given the typically indolent onset and challenging diagnosis of SpA, the incidence is much more challenging to assess because it is predicated on the ability to assign a specific diagnosis date. Nevertheless, the incidence for SpA has been determined for AS (range 0.5–10.6 per 100,000 population), psoriatic arthritis (range 0.1–8.0 per 100,000 population), and reactive arthritis (0.6–28.0 per 100,000 population).[6]

Inflammatory Bowel Disease

IBD represents the most frequently encountered and well-described GI manifestation of SpA. For this reason, it occupies the focus of this report. The prevalence for IBD is similar to that of SpA, with estimates of approximately 0.5% in North America (500 cases per 100,000 population).[8,9] In North America, the prevalence of ulcerative colitis (UC) slightly exceeds that of Crohn disease (CD); these two entities comprise the vast majority of IBD cases.[8,9] The annualized incidence of UC and CD has been reported as 6 to 10 per 100,000 population and 12 per 100,000 population, respectively.[9]

Few studies have simultaneously estimated the prevalence of both SpA as a whole and EAA in particular. An Italian study determined the prevalence of SpA to be 1.06% and IBD to be 0.09%,[10] whereas a Swedish study using a health registry estimated the prevalences at 0.55% and 0.02%, respectively.[11]

Frequency of Spondyloarthritis and Inflammatory Bowel Disease in Affected Populations

The prevalence of clinically apparent IBD among individuals with SpA has been estimated to be approximately 7%.[12] This estimate does not, however, reflect the high rates of subclinical (asymptomatic) inflammation apparent in patients with SpA, whether assessed by ileocolonoscopy[13] or capsule endoscopy.[14] Inflammatory lesions also appear in the biopsies of up to 65% of patients with SpA.[15,16] Likewise, a recent meta-analysis has estimated the prevalence of peripheral arthritis (13%), sacroiliitis (10%), and AS (3%) among individuals with IBD.[17]