Incidence of inflammatory bowel disease in patients with ankylosing spondylitis

Ankylosing spondylitis is a long-term inflammatory disease that always affects the spine joints. The association between ankylosing spondylitis and other diseases has been extensively assessed.1,2 Recently a cohort study conducted by Schreiber et al published in *Annals of the Rheumatic Diseases* found that the new-onset cases of inflammatory bowel disease were uncommon in patients with ankylosing spondylitis on secukinumab therapy (1.13%, 9/794).3 In order to examine the association between ankylosing spondylitis and inflammatory bowel disease in a different country, a preliminary study was undertaken using the 2005–2012 database of the Taiwan National Health Insurance Programme with 23 million residents living in Taiwan.4 Subjects ages 20–84 with a new diagnosis of ankylosing spondylitis were identified as the ankylosing spondylitis group (International Classification of Diseases, Ninth Revision code (ICD-9 code 720.0)). For every subject with ankylosing spondylitis, four sex-matched and age-matched subjects who did not have a diagnosis of ankylosing spondylitis were assigned as the non-ankylosing spondylitis group. The main outcome was a new diagnosis of inflammatory bowel disease (ICD-9 code 555–556). Table 1 presents that the overall incidence of inflammatory bowel disease was lower in the ankylosing spondylitis group than in the non-ankylosing spondylitis group, but without reaching statistical significance (1.41 vs 1.79 per 1000 person-years, incidence rate ratio 0.79, 95% CI 0.48 to 1.28; p = 0.332). As stratified by sex and age, there was no statistical significance in the incidence of inflammatory bowel disease between the ankylosing spondylitis group and the non-ankylosing spondylitis group.

Some caveats are discussed. Previous studies found that the prevalence of ankylosing spondylitis in patients with inflammatory bowel disease was around 3.7%–4.5%.6 One review found that the prevalence of inflammatory bowel disease in patients with ankylosing spondylitis was around 6%–14%.7 Due to both conditions likely occurring concomitantly, some researchers suggest that ankylosing spondylitis and inflammatory bowel disease might share a similar pathogenesis.8 Therefore, ankylosing spondylitis and inflammatory bowel disease might develop in the same patient, but both conditions do not have a causal relationship, which is partially confirmed by our present study. Physicians who participate in care of patients with ankylosing spondylitis should take into consideration the possibility of inflammatory bowel disease, and vice versa.

Shih-Wei Lai ,1,2 Yu-Hung Kuo,3 Kuan-Fu Liao

1College of Medicine, China Medical University, Taichung, Taiwan
2Department of Family Medicine, China Medical University Hospital, Taichung, Taiwan
3Department of Research, Taichung Tzu Chi Hospital, Taichung, Taiwan
4College of Medicine, Tzu Chi University, Hualien, Taiwan
5Division of Hepatogastroenterology, Department of Internal Medicine, Taichung Tzu Chi Hospital, Taichung, Taiwan

**Correspondence to** Dr Kuan-Fu Liao; kuanfuliaog@gmail.com

**Handling editor** Josef S Smolen

**Contributors** S-WL contributed to the conception of the article, initiated the draft of the article, and has approved the final draft submitted. Y-HK and K-FL conducted data analysis.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; internally peer reviewed. © Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.


Received 24 September 2019
Accepted 26 September 2019
Published Online First 14 October 2019

**ORCID iD** Shih-Wei Lai http://orcid.org/0000-0002-7420-1572

**REFERENCES**

**Table 1 Incidence of inflammatory bowel disease between ankylosing spondylitis group and non-ankylosing spondylitis group**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ankylosing spondylitis</th>
<th>Non-ankylosing spondylitis</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>N = 3003</td>
<td>Event = 18</td>
<td>1.41</td>
</tr>
<tr>
<td>Male</td>
<td>1767</td>
<td>10</td>
<td>0.79 (0.48 to 1.28)</td>
</tr>
<tr>
<td>Female</td>
<td>1236</td>
<td>8</td>
<td>0.70 (0.37 to 1.35)</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–39</td>
<td>1280</td>
<td>7</td>
<td>0.92 (0.44 to 1.91)</td>
</tr>
<tr>
<td>40–64</td>
<td>1342</td>
<td>8</td>
<td>0.93 (0.34 to 1.60)</td>
</tr>
<tr>
<td>65–84</td>
<td>381</td>
<td>3</td>
<td>0.81 (0.39 to 1.69)</td>
</tr>
</tbody>
</table>

Incidence: per 1000 person-years.

*Incidence rate ratio: ankylosing spondylitis vs non-ankylosing spondylitis (95% CI).*