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Incidental computed tomography findings in patients with psoriatic arthritis: a comparison with those in patients with psoriasis vulgaris

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Dear Editors,

Psoriasis is one of the most common immune-mediated, chronic inflammatory diseases that predominantly affect the skin and joints [1]. Recently, we demonstrated that fatty liver disease, urolithiasis, and gallstones are frequently observed upon computed tomography (CT) of patients with psoriasis, and that psoriasis is a risk factor for the development of such comorbidities [2]. The aim of this study was to determine whether specifically the presence of psoriatic arthritis (PsA) is a risk factor for fatty liver disease, urolithiasis, and gallstones.

This study was approved by the Ethical Committee of Jichi Medical University. Details of the methods used in this study have already been reported [2]. Patients with psoriasis who received biologics between 1 January 2020 and 28 February 2021 at Jichi Medical University Hospital were enrolled in this study. Data were retrospectively collected from electronic medical records. A survey was designed to acquire information regarding patient characteristics and incidental findings on cervical, chest, abdominal, and pelvic CT images.

A total of 131 patients with psoriasis vulgaris (PsO) and 84 with PsA were retrospectively included in this study (Table 1). In the PsO group, 91 (69.5%) patients were men and 40 (30.5%) were women; their mean ± standard deviation age was 56.0 ± 15.3 years, and 46 patients were aged ≥65 years. In the PsA group, 64 (76.2%) patients were men and 20 (23.8%) were women; their average age was 51.7 ± 12.5 years, and 9 were aged ≥65 years. In the PsO group, the prevalence of fatty liver disease, urolithiasis, and gallstones was 50 (38.2%), 31 (23.7%), and 22 (16.8%) patients, respectively. These prevalences were 30 (35.7%), 21 (25.0%), and 15 (17.9%) patients, respectively, in the PsA group. The chi-square test was used to compare the prevalence of fatty liver disease, urolithiasis, and gallstones between patients with PsO and PsA. The statistical significance level was set at 0.05. None of the prevalences significantly differed between the groups.

Various comorbidities and risk factors interact with each other in the pathogenesis of psoriasis [3]. Metabolic syndrome is strongly associated with the development of psoriasis. In addition, chronic systemic inflammation increases the risk of cardiovascular diseases. The prevalence of lifestyle diseases

TABLE 1 Demographic and clinical characteristics of patients and incidental findings upon computed tomography.

	Psoriasis vulgaris	Psoriatic arthritis	*p*-Value
Number of patients	131	84	
Men:Women	91:40	64:20	
Age (years), mean ± SD	56.0 ± 15.3	51.7 ± 12.5	
Age ≥ 65 years	46 (men, 29; women, 17)	9 (men, 8; women, 1)	
Fatty liver disease	50 (38.2%)	30 (35.7%)	0.716
Urolithiasis	31 (23.7%)	21 (25.0%)	0.823
Gallstones or postoperative gallstones	22 (16.8%)	15 (17.9%)	0.840

p values were calculated with the chi-square test. Abbreviation: SD, standard deviation.

and cardiovascular events among patients with PsA is significantly higher than those in patients with psoriasis without arthritis [4]. In patients with moderate-to-severe psoriasis, CT frequently reveals fatty liver disease, urolithiasis, and gallstones [2]. In this past study, multivariate logistic regression was performed to estimate the effect of psoriasis while adjusting for confounding factors such as age, body mass index, sex, type 2 diabetes mellitus, hypertension, and dyslipidemia [2]. The results showed that psoriasis was a risk factor for fatty liver disease, urolithiasis, and gallstones. Fatty liver disease is a well-known comorbidity of psoriasis and the risk of fatty liver disease is marginally higher in patients with PsA than in those with PsO [5]. In contrast, the pathogenesis of urolithiasis and gallstones in patients with psoriasis remains unclear. We speculated that inflammatory cytokines, especially tumor necrosis factor, played a substantial role in the pathogenesis of these diseases. However, the prevalence of urolithiasis and gallstones did not differ between the PsO and PsA groups in this study. Although psoriasis is a risk factor for the development of these comorbidities [2], other confounding factors might have been present. The limitations of this study include its nature as a single-center retrospective study with a small sample size and limited data from the medical records. To the best of our knowledge, no previous studies have been conducted to examine whether PsA is a risk factor for urolithiasis or gallstones. Our results add to the body of knowledge and will hopefully lead to further studies on these comorbidities.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by the Jichi Medical University Hospital. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin because we applied opt-out method on this study.

Author contributions

NS and KK contributed to conception and design of the study. NS and KK organized the database. NS and MM performed the statistical analysis. NS and KK wrote the first draft of the manuscript. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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