

# 青年論文獎

時間：114 年 11 月 22 日(星期六)08：35-09：05

地點：台中林酒店 3F 國際廳

摘要：

座長/Moderator	中山醫學大學附設醫院 魏正宗醫師
08:35-08:47	<p><b>Feasibility and validity of score-based risk stratification for screening of rheumatoid arthritis interstitial lung disease</b> <u>Tai-Ju Lee</u><sup>1</sup>, Kuan-Yen Lin<sup>1</sup>, Ting-Wei Chang<sup>1</sup>, Kung-Yu Wang<sup>1</sup>, Cheng-Han Wu<sup>1</sup>, Wei-Yong Lo<sup>1</sup>, and Ting-Yuan Lan<sup>1</sup> 1 National Taiwan University Hospital Hsinchu Branch, Taiwan <b>以風險量表進行類風濕性關節炎間質性肺炎篩檢之可行性與效度分析</b> <u>李岱儒</u><sup>1</sup>, 林冠言<sup>1</sup>, 張庭暉<sup>1</sup>, 王恭宇<sup>1</sup>, 吳政翰<sup>1</sup>, 羅位庸<sup>1</sup>, 藍鼎淵<sup>1</sup> 1 國立臺灣大學醫學院附設醫院新竹臺大分院</p>
08:47-08:50	Q & A
08:50-09:02	<p><b>Don't just look at weight: renal function shapes hydroxychloroquine whole-blood levels in systemic lupus erythematosus patients</b> <u>Ting-Wei Chang</u><sup>1</sup>, Ting-Yuan Lan<sup>1</sup>, Tai-Ju Lee<sup>1</sup>, Kuan-Yen Lin<sup>1</sup>, Ko-Jen Li<sup>2</sup> 1National Taiwan University Hospital Hsinchu Branch, Department of Rheumatology, Immunology and Allergy, Hsinchu, Taiwan; 2National Taiwan University Hospital, Department of Rheumatology, Immunology and Allergy, Taipei, Taiwan <b>別只看體重：腎功能牽動紅斑性狼瘡病人的羥氯奎寧全血濃度</b> <u>張庭暉</u><sup>1</sup>, 藍鼎淵<sup>1</sup>, 李岱儒<sup>1</sup>, 林冠言<sup>1</sup>, 李克仁<sup>2</sup> 1 國立台灣大學醫學院附設醫院新竹台大分院風濕免疫與過敏科 2 國立台灣大學醫學院附設醫院風濕免疫與過敏科</p>
09:02-09:05	Q & A

# Feasibility and validity of score-based risk stratification for screening of rheumatoid arthritis interstitial lung disease

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以風險量表進行類風濕性關節炎間質性肺炎篩檢之可行性與效度分析

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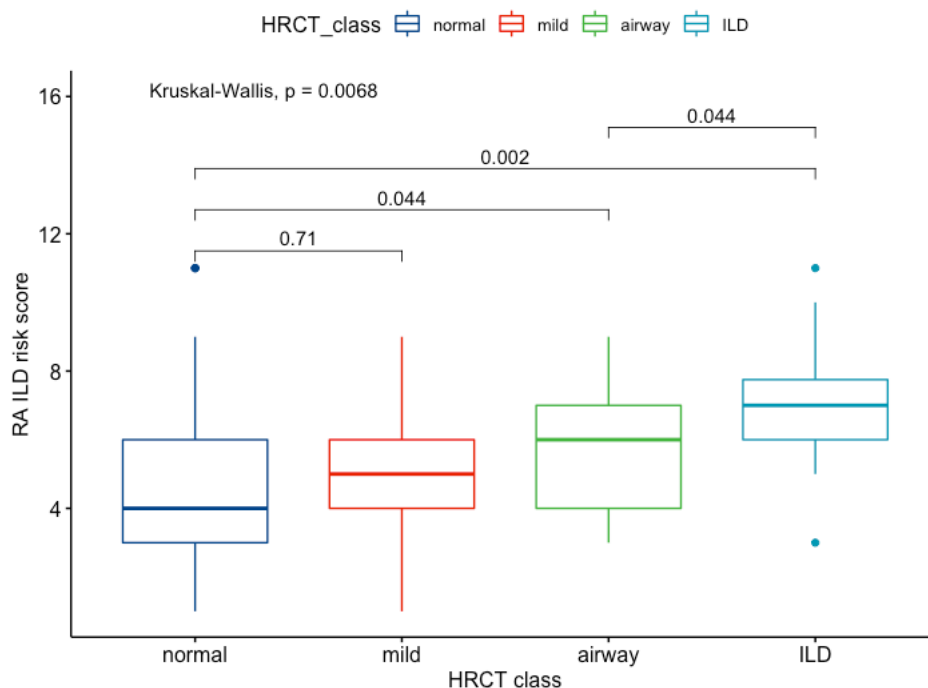
**Background:** Interstitial lung disease (ILD) is one of the major complications in patients with rheumatoid arthritis (RA). The lifetime risk of ILD ranged around 5 to 20%. The chest high-resolution computed tomography (HRCT) is the standard test for ILD screening. Despite the introduction of various screening protocols that integrate established risk factors for RA ILD, their efficacy and clinical relevance are yet to be validated.

**Materials and methods:** In this retrospective study, a screening questionnaire was developed based on the proposed screening criteria. Eligible adult RA patients took screening questionnaire and underwent screening HRCT. The significance of symptoms, demographic and serology, and risk scores on abnormal HRCT findings was evaluated.

**Results:** From September to December 2024, 213 patients completed the questionnaire and 83 patients who underwent HRCT were included in the final analysis. 78% were female and the median (IQR) age was 66 (56-74) years. Respiratory symptoms included exertional dyspnea (40%), chronic cough (31%) and resting dyspnea (8.4%). The median (IQR) RA ILD risk score was 6 (4-7). The risk score was significantly higher in the patients with ILD (**Figure**) and 38% of high-score patients had ILD. On multivariate regression analyses, older age (OR: 1.1), high-titer anti-CCP (OR: 3.87), and cough (OR: 5.64) were independently associated with ILD. In the risk score-based model, high risk score (OR: 13.6), and cough (OR: 3.81) were associated with the increased risk for ILD (**Table**).

**Conclusion:** Risk score-based screening greatly enriched the yielding rate of RA ILD and could prompt HRCT screening.

**Figure: RA ILD risk scores by HRCT findings**



**Table: univariable and multivariable regression for significant lung disease on HRCT**

	Univariable			Multivariable Model 1: symptoms + clinical risk factor			Multivariable Model 1: symptoms + risk score		
	OR	95% CI	p- value	OR	95% CI	p- value	OR	95% CI	p- value
<b>Clinical risk factors</b>									
Age	1.01	1.00, 1.02	0.002	1.10	1.04, 1.18	0.004			
Sex = male	1.08	0.87, 1.34	0.5						
Smoking	1.01	0.94, 1.09	0.7						
Long disease duration	1.03	0.85, 1.24	0.8						
High-titer anti-CCP	1.20	1.01, 1.43	0.045	3.87	1.11- 15.5	0.041			
<b>Respiratory symptoms</b>									
Chronic cough	1.35	1.13, 1.62	0.002	5.64	1.64- 21.6	0.008	3.81	1.19- 12.8	0.026
Dyspnea	0.92	0.67, 1.27	0.6						
<b>RA ILD Risk score</b>									
Low	(ref)	-	-						
Medium	1.24	1.00, 1.55	0.056				8.12	1.11- 166	0.071
High	1.41	1.16, 1.71	<0.001				13.6	2.28- 262	0.017

## **Don't just look at weight: renal function shapes hydroxychloroquine whole-blood levels in systemic lupus erythematosus patients**

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**別只看體重：腎功能牽動紅斑性狼瘡病人的羥氯奎寧全血濃度**

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**Background:** Therapeutic hydroxychloroquine (HCQ) blood levels sit between 500-1200 ng/mL according to previous studies; concentrations >1200 ng/mL raise retinopathy risk. Guidelines advise weight-based dosing (~5 mg/kg/day), yet renal clearance markedly alters exposure and Asian data are scarce.

**Methods:** We retrospectively analyzed 184 Taiwanese adults with systemic lupus erythematosus (SLE) (March 2022-February 2025). Recorded variables included demographics, estimated glomerular filtration rate (eGFR), HCQ regimen (fixed 50-400 mg/day or weight-based <5, 4-6, ≥5 mg/kg/day) and LC-MS/MS whole blood drug levels, classified as supra-therapeutic, within-therapeutic, or sub-therapeutic. Results were stratified by eGFR ≥90, 60-89, 30-59, <30 mL/min/1.73 m<sup>2</sup>.

**Results:** Median HCQ use was 6.5 years. A higher proportion of patients receiving 400 mg/day were supra-therapeutic across all eGFR categories. In contrast, more than 90% of patients receiving 200 mg/day fell below the therapeutic range when eGFR was ≥30 mL/min/1.73 m<sup>2</sup>. Under weight-based regimens, 69% of patients with normal renal function remained sub-therapeutic at 4-6 mg/kg/day, yet ≥5 mg/kg/day drove 66% of patients with eGFR <30 mL/min/1.73 m<sup>2</sup> into supra-therapeutic levels; even <5 mg/kg/day left 25% of this group above range. Thus, preserved renal function predisposed to under-exposure, while chronic kidney disease favored accumulation.

**Conclusion:** Neither fixed-dose nor conventional weight-based regimens consistently attain target HCQ levels in Taiwanese patients with SLE. A daily dose of 200 mg is insufficient in most cases, while individuals with impaired renal function require blood-level monitoring to avoid overdosing. Renal-function-adjusted dosing combined with therapeutic drug monitoring can maximize efficacy and minimize retinal toxicity.

Table 1: Patient characteristics

Characteristic	N = 184 <sup>†</sup>
Age, years (median [IQR])	45.14 (36.77–55.44)
Female, n (%)	168 (91%)
Height, cm (median [IQR])	158.50 (155.00–163.00)
Weight, kg (median [IQR])	54.70 (49.60–63.30)
BMI, kg/m <sup>2</sup> (median [IQR])	21.70 (19.54–24.60)
HCQ duration, years (median [IQR])	6.50 (1.35–13.63)
<b>HCQ dose, mg/day (n, %)</b>	
400 mg	106 (58%)
300 mg	2 (1.1%)
200 mg	72 (39%)
100 mg	4 (2.2%)
<b>Renal function (eGFR), n (%)</b>	
eGFR ≥90	103 (56%)
60 ≤ eGFR <90	58 (32%)
30 ≤ eGFR <60	12 (6.5%)
eGFR <30	11 (6.0%)

<sup>†</sup> Median (Q1–Q3); n (%)

Figure 1: Fixed-dose and weight-based regimens

