

Poster Round

海報目錄

時間：114年11月22日(星期六)11:15-11:40

地點：台中林酒店 3F 世紀廳海報區

主持人：許鐘元醫師

| 編號 | 題目 | 作者 |
|--------|--|--|
| TCR 01 | Disease-Specific Epigenetic Signatures in Smokers with Rheumatoid Arthritis 類風濕性關節炎吸菸患者的疾病特異性表觀遺傳特徵 | 柯祈化、陳嘉峯、尤珊富、鄭添財、賴漢明、邱文燦、許鐘元、蘇昱日、陳英州 |
| TCR 02 | Comparative Cardiovascular Safety of Biologic and Targeted Synthetic DMARDs in Rheumatoid Arthritis: A Real-World Cohort Study from Taiwan 類風濕性關節炎患者使用生物製劑與 JAK 抑制劑之心血管安全性：台灣世代研究 | Shih-Hsin Chang 張詩欣, Mao-Yuan Chen, Ming-Han Chen 陳明翰, Der-Yuan Chen 陳得源 |
| TCR 03 | Differential Effects of Anti-Osteoporosis Therapy on Vertebral Bone Mineral Density and Trabecular Bone Score in Rheumatoid Arthritis Patients: A 3-Year Observational Registry Study 抗骨鬆治療對類風濕性關節炎病患椎體骨質密度與骨小樑分數的差異性影響：一項為期三年的觀察性登錄研究 | 戴諺綸, 王佩璇, 鄭添財, 陳嘉峯, 許鐘元, 邱文燦, 蘇昱日, 尤珊富, 賴漢明, 陳英州 |
| TCR 04 | FTO rs7195994 Predicts TNF Inhibitor Response in Lean Rheumatoid Arthritis Patients: A BMI-Stratified Pharmacogenetic Analysis FTO 基因多型性 rs7195994 可預測瘦體型類風濕性關節炎患者對腫瘤壞死因子抑制劑治療反應：一項基於體重指數分層的藥物基因學研究 | 李宜庭、陳怡潔、高宗楙、陳彥如、黃文男、陳一銘 |
| TCR 05 | Incidence of Common and Opportunistic Infections in Patients with Rheumatoid Arthritis and Psoriatic Arthritis Treated with Tofacitinib: A Retrospective Cohort Study in Taiwan 接受Tofacitinib治療之類風濕性關節炎與乾癬性關節炎患者的尋常性與伺機性感染發生率：台灣回溯性世代研究 | 陳乃慈；黃光永；童建學；許寶寶；呂明錡*；賴寧生* |
| TCR 06 | The Prevalence and Risk Factors of Sarcopenia in Patients with Rheumatoid Arthritis in Taiwan: A Cross-Sectional Study 肌少症在台灣類風濕性關節炎患者中的盛行率及危險因子分析：一個橫斷面研究 | 林昱亨, 高瑞鴻, 莊捷安, 張楷杰, 鄭喬峯, 林彥均, 陳仁豪, 藍士勛, 黃立恒, 劉津秀, 李克仁, 謝松洲 |
| TCR 07 | Correlation Between Bone Mineral Density and Trabecular Bone Score in Patients with Rheumatoid Arthritis: A Registry-Based Study 類風濕性關節炎病患骨質密度與骨小樑分數之相關性：一項基於登錄資料的研究 | 王佩璇, 戴諺綸, 鄭添財, 許鐘元, 陳嘉峯, 邱文燦, 蘇昱日, 尤珊富, 賴漢明, 陳英州 |
| TCR 08 | Clinical Images: Bywaters Lesions in Early Seropositive Rheumatoid Arthritis | 許鐘元 |
| TCR 09 | From Misdiagnosis to Clarity: A Case of Overlapping Rheumatoid Arthritis, Antisynthetase Syndrome, and Sjögren's Syndrome – The Importance of Thorough Clinical Evaluation | 蔡万濠 |
| TCR 10 | Kaposi's Sarcoma in Patient with Rheumatoid Arthritis Receiving Abatacept: A Case Report 使用Abatacept 治療之類風濕性關節炎患者發生卡波西氏肉瘤：個案報告 | 戴諺綸, 林昱廷, 許鐘元, 鄭添財 |

| 編號 | 題目 | 作者 |
|--------|---|---|
| TCR 11 | <p>Generalized tocilizumab hypersensitivity resolves after switching from subcutaneous to intravenous administration in rheumatoid arthritis.</p> <p>類風濕性關節炎患者的全身性Tocilizumab過敏反應在皮下注射改為靜脈注射後緩解</p> | 陳亦抒、李克仁、呂政勳 |
| TCR 12 | <p>Methotrexate-Associated Lymphoproliferative Disorders in Rheumatoid Arthritis: A Case Series and Literature Review</p> <p>類風濕性關節炎中與甲氨蝶呤相關的淋巴增生性疾病：病例系列與文獻回顧</p> | 沈品佑, 林聖閔, 高瑞鴻, 李苡萍, 蘇勤方, 張又升 |
| TCR 13 | <p>diagnostic journey through treatment response: A case of rheumatoid arthritis-associated organizing pneumonia treated with tocilizumab</p> <p>透過治療反應進行鑑別診斷：一例類風濕性關節炎相關性器質化肺炎使用tocilizumab治療的病例報告</p> | 黃瑞霖, 蘇勤方 |
| TCR 14 | <p>Efficacy and safety of allogenic adipose-derived mesenchymal stem cells (AD-MSCs) therapy in CTD patients with progressive fibrosing of interstitial lung disease (PF-ILD): Interim analysis</p> <p>以異體脂肪組織幹細胞治療結締組織疾病患者併發進行性纖維化間質肺病變之有效性與安全性:期中分析</p> | 陳得源、陳柏谷、張詩欣、李光申、黃建中、藍忠亮 |
| TCR 15 | <p>Survival and economic burden of CTD-associated pulmonary hypertension in real-world practice</p> <p>真實世界資料下結締組織病相關肺高壓患者之生存狀況與經濟負擔</p> | 邱瑩明, 陳得源 |
| TCR 16 | <p>Association of Serum Complement C3 Levels with Disease Severity in Patients with Connective Tissue Disease-Associated Interstitial Lung Disease</p> <p>血清補體C3濃度與結締組織疾病相關間質性肺病嚴重程度之相關性</p> | 戴諺綸, 陳嘉峯, 許鐘元, 邱文燦, 蘇昱日, 尤珊富, 賴漢明, 陳英州, 鄭添財 |
| TCR 17 | <p>Change in high-resolution computed tomography screening strategy and its impact on radiographic patterns in systemic sclerosis interstitial lung disease: a single-center study</p> <p>全身性硬化症病患肺部電腦斷層篩檢策略對於間質性肺炎與影像學分類之影響：單一中心研究</p> | 李岱儒, 白紹玉, 張詩欣, 顏在弘, 藍鼎淵, 謝松洲, 藍忠亮, 李克仁 |
| TCR 18 | <p>Safety and effectiveness of belimumab in high-risk inflammatory interstitial lung diseases</p> <p>Belimumab在高風險發炎性間質性肺病中的安全性及療效</p> | 林冠言, 藍鼎淵, 張庭暉, 白紹玉, 謝松洲, 李岱儒 |
| TCR 19 | <p>The long-noncoding RNA, LOC100506014, regulates the inflammatory responses via association with G protein-coupled receptor kinase 3 in T cells of ankylosing spondylitis patients</p> <p>長鏈非編碼核糖核酸LOC100506014藉由僵直性脊椎炎患者T細胞中的G蛋白偶聯受體激酶3結合來調節發炎反應</p> | 陳惠婷, 游惠君, 黃憲斌, 賴寧生, 呂明錡 |

Disease-Specific Epigenetic Signatures in Smokers with Rheumatoid Arthritis

Ko-Chi-Hua; Jia-Feng Chen; Shan-Fu Yu ;Tien-Tsai Cheng, Wen-Chan Chiu, Chung-Yuan Hsu , Yu-Jih Su , Ying-Chou Chen

Division of Rheumatology, Allergy, and Immunology, Kaohsiung Chang Gung Memorial Hospital

類風濕性關節炎吸菸患者的疾病特異性表觀遺傳特徵

柯祈化、陳嘉峯、尤珊富、鄭添財、賴漢明、邱文燦、許鐘元、蘇昱日、陳英州

高雄長庚紀念醫院 風濕過敏免疫科

Background: Rheumatoid arthritis (RA) patients with a history of cigarette smoking often present with more aggressive disease, including elevated autoantibody levels, increased joint destruction, and poorer therapeutic outcomes. While smoking is recognized as a modifiable risk factor, the molecular mechanisms by which it exacerbates disease activity in individuals already diagnosed with RA remain unclear. Epigenetic modifications—particularly DNA methylation—offer a plausible link between environmental exposure and immune dysregulation, potentially accounting for enhanced inflammatory responses in smokers with RA.

Objectives: To identify RA-specific DNA methylation patterns in smokers, distinct from general smoking-related changes.

Methods: Genome-wide DNA methylation profiles were obtained from peripheral blood samples of 30 female RA patients with a history of smoking and 30 healthy female smokers, using data from the publicly available GSE42861 dataset (Illumina HumanMethylation450K array). After quality control, normalization, and batch effect correction, differentially methylated positions (DMPs) were identified based on \log_2 fold-change and $-\log_{10}$ P-value criteria. Functional annotation emphasized CpG loci implicated in smoking response, immune regulation, and autoimmune disease pathways.

Result: RA smokers exhibited enhanced hypomethylation at canonical smoking-responsive loci, including cg05575921 and cg25648203 within the AHRR gene (\log_2FC -0.229 and -0.059 , respectively), and cg01940273 (AC068134.5; \log_2FC -0.119), a non-coding locus previously associated with smoking-related malignancies. Additional CpG sites within the same genomic region (cg05951221 and cg21566642) showed concordant hypomethylation, suggesting localized epigenetic remodeling.

Importantly, several CpG sites demonstrated RA-specific hypomethylation not observed in healthy smokers. These included cg22103219 (SH2B2/MIR4285; \log_2FC -0.052), implicated in B-cell signaling and linked to primary Sjögren's syndrome; cg25189904 (GNG12; \log_2FC -0.106), associated with circulating C-reactive protein levels; cg15342087 (\log_2FC -0.041), previously connected to psoriasis; and cg26703534 (AHRR; \log_2FC -0.058), a site also reported in multiple sclerosis. In contrast, CpG sites such as cg03329539 and cg03636183 exhibited similar hypomethylation in both RA and control groups, reflecting generalized smoking-related epigenetic effects.

Conclusions: Smokers with RA exhibit a distinct epigenetic profile, characterized by amplified hypomethylation at canonical smoking loci and additional disease-specific changes at immune-regulatory CpG sites. These findings suggest that RA may involve an aberrant epigenetic response to smoking, warranting further studies to clarify its role in autoimmune pathogenesis.

Keywords: Rheumatoid arthritis, DNA methylation, smoking, epigenetics, CpG, immune regulation

Comparative Cardiovascular Safety of Biologic and Targeted Synthetic DMARDs in Rheumatoid Arthritis: A Real-World Cohort Study from Taiwan

類風濕性關節炎患者使用生物製劑與 JAK 抑制劑之心血管安全性：台灣世代研究

Shih-Hsin Chang 張詩欣^{1,2}, Mao-Yuan Chen³, Ming-Han Chen 陳明翰^{3,4}, Der-Yuan Chen 陳得源^{1,2,5}

¹ Rheumatology and Immunology Center, China Medical University Hospital, Taichung, Taiwan;

² College of Medicine, China Medical University, Taichung, Taiwan;

³ Division of Allergy, Immunology & Rheumatology, Department of Medicine, Taipei Veterans General Hospital, Taipei, Taiwan;

⁴ Department of Medicine, National Yang Ming Chiao Tung University, Taipei, Taiwan;

⁵ Translational Medicine Laboratory, Rheumatology and Immunology Center, Taichung, Taiwan.

¹ 中國醫藥大學附設醫院風濕免疫中心

² 中國醫藥大學醫學院

³ 台北榮民總醫院內科部過敏免疫風濕科

⁴ 國立陽明交通大學醫學系

⁵ 中國醫藥大學附設醫院風濕免疫中心

Background:

Rheumatoid arthritis (RA) is associated with an elevated risk of major adverse cardiovascular events (MACE), driven by chronic inflammation and comorbidities. While tumor necrosis factor inhibitors (TNFi) have traditionally been first-line biologics, the cardiovascular safety of newer targeted therapies—including Janus kinase inhibitors (JAKi), rituximab, abatacept, and tocilizumab—remains under active investigation.

Methods:

This retrospective cohort study analyzed 3,012 RA patients from two Taiwanese medical centers between 2003 and 2023. Time-dependent Cox proportional hazards models were used to evaluate MACE risk across six DMARD groups, adjusting for age, sex, comorbidities, inflammatory markers, and treatment switching. Subgroup analyses stratified patients by age, cardiovascular risk, and JAKi subtype.

Results:

Over 21,773 person-years, 173 MACE events were recorded. After adjustment, rituximab (HR: 0.18, 95% CI: 0.06–0.57) and JAK inhibitors (HR: 0.48, 95% CI: 0.23–0.99) were associated with significantly reduced MACE risk compared to TNFi. These protective effects were more evident in patients aged <65 years. Tofacitinib showed the most favorable cardiovascular profile among JAKi, with no signal of increased risk even in high-risk subgroups. Traditional risk factors—older age, smoking, cardiovascular history, and multimorbidity—were strongly associated with MACE, while baseline CRP, ESR, and glucocorticoid use were not.

Conclusion:

Our study supports the notion that in real-world practice, JAK inhibitors—particularly tofacitinib—do not appear to increase the risk of MACE compared to TNF inhibitors, and may even offer cardiovascular benefit in younger or well-selected patients. These findings contrast with the ORAL Surveillance trial and support individualized, risk-adapted treatment strategies in RA.

Differential Effects of Anti-Osteoporosis Therapy on Vertebral Bone Mineral Density and Trabecular Bone Score in Rheumatoid Arthritis Patients: A 3-Year Observational Registry Study

Yen-Lun Tai, Pei-Xuan Wang, Tien-Tsai Cheng, Jia-Feng Chen, Chung-Yuan Hsu, Wen-Chan Chiu, Yu-Jih Su, Shan-Fu Yu, Han-Ming Lai, Ying-Chou Chen

Division of Rheumatology, Allergy and Immunology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan

抗骨鬆治療對類風濕性關節炎病患椎體骨質密度與骨小樑分數的差異性影響：一項為期三年的觀察性登錄研究

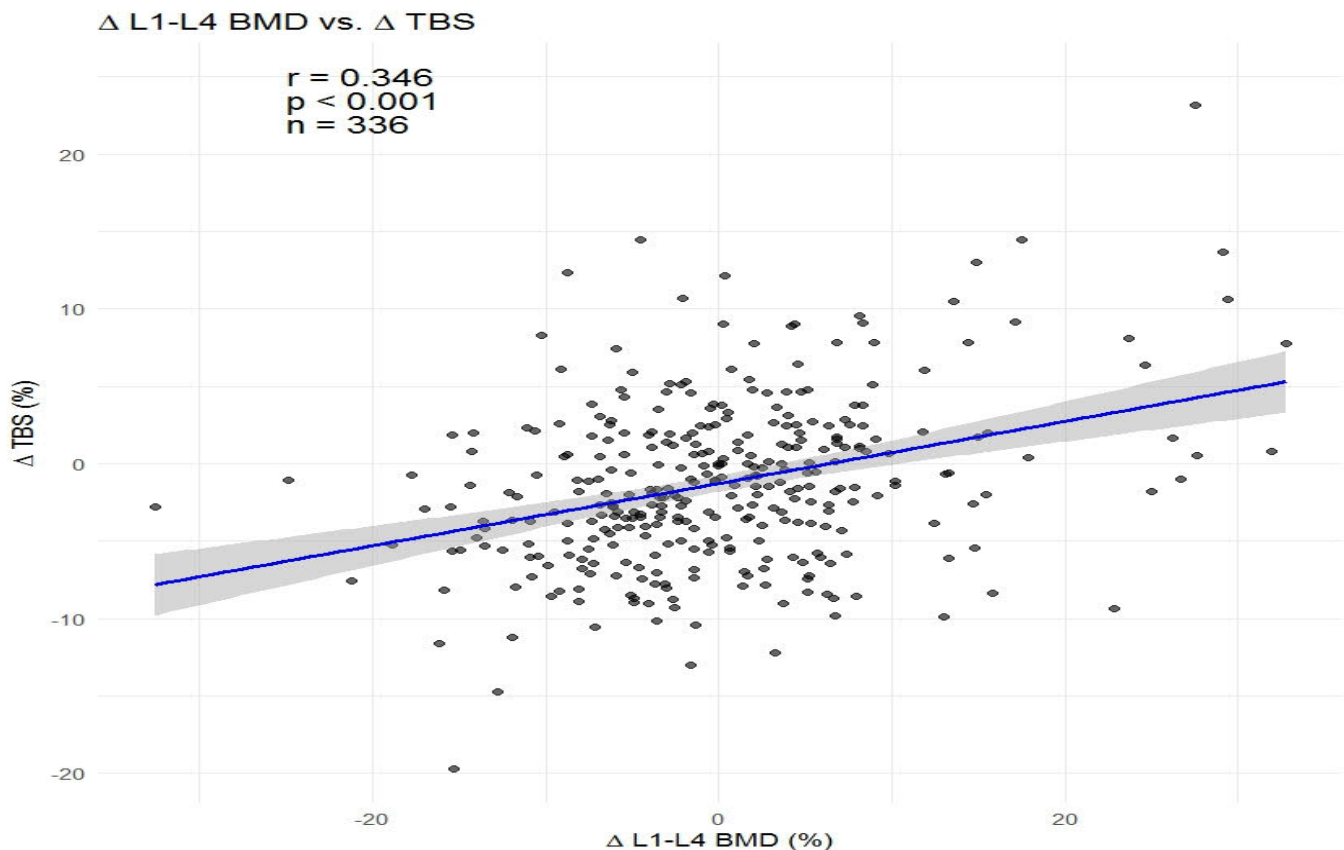
戴諺綸, 王珮璇, 鄭添財, 陳嘉峯, 許鐘元, 邱文燦, 蘇昱日, 尤珊富, 賴漢明, 陳英州
高雄長庚紀念醫院內科部風濕過敏免疫科

Background: This study aimed to evaluate the annual percent change in vertebral bone mineral density (BMD) and trabecular bone score (TBS) in patients with rheumatoid arthritis (RA) receiving anti-osteoporosis therapy (AOT), and to examine the correlation between these changes.

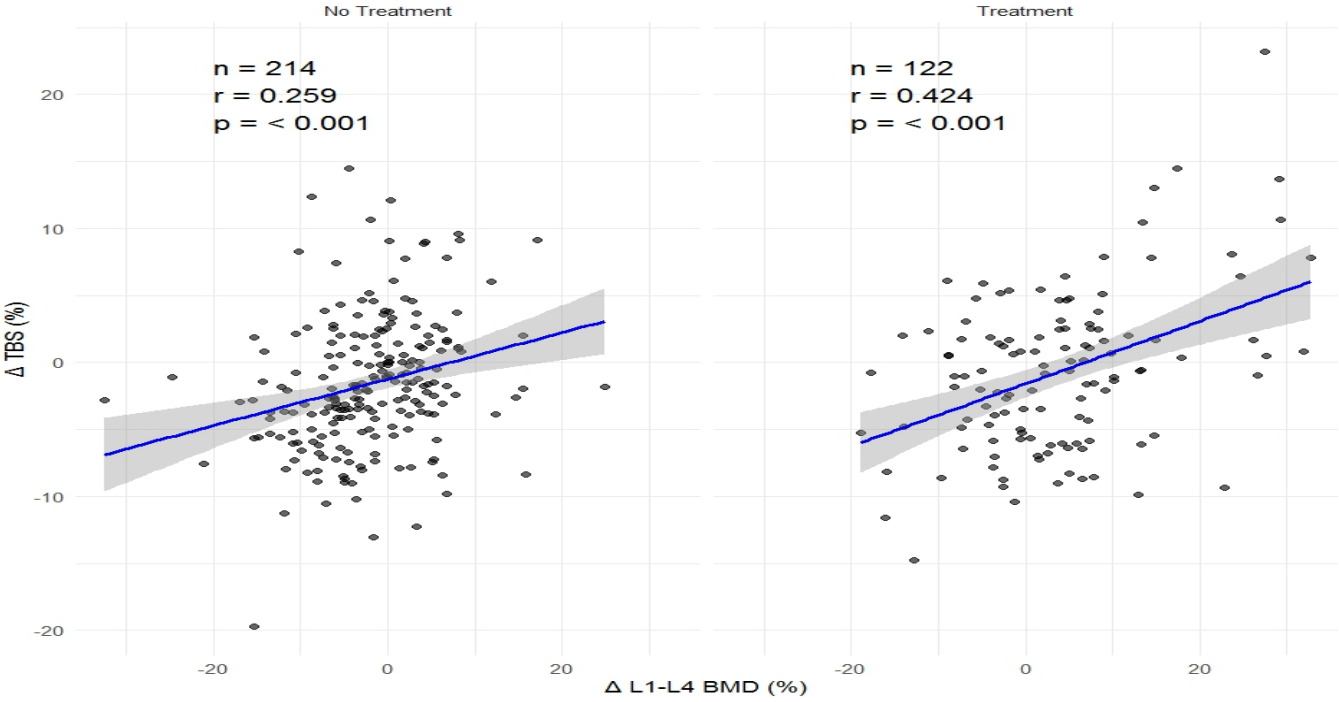
Methods: This interim analysis was based on data from an RA-related osteoporosis registry at Chang Gung Memorial Hospital, Kaohsiung. RA patients fulfilling ACR 1987 or 2010 ACR/EULAR criteria with two BMD and TBS measurements taken three years apart were included. Annual percent changes in lumbar spine BMD (L1–L4) and TBS were calculated and stratified by AOT use.

Results: Among 710 enrolled patients, 339 met inclusion criteria. The median annual change in BMD was -0.45% (IQR 1.97) in patients without AOT and $+0.79\%$ (IQR 2.74) in those with AOT ($p < 0.001$). TBS declined in both groups: -0.44% (IQR 1.32) without AOT and -0.17% (IQR 1.56) with AOT ($p = 0.26$). BMD and TBS changes showed moderate correlation in the AOT group ($r = 0.424$, $p < 0.001$) and weak correlation in the non-AOT group ($r = 0.259$, $p < 0.001$).

Conclusion: In RA patients, AOT significantly improved vertebral BMD over three years but had no significant impact on TBS. These findings suggest that AOT may enhance bone quantity more than bone quality in this population.



Correlation of Δ BMD and Δ TBS by Treatment Group



海報摘要 TCR04

FTO rs7195994 Predicts TNF Inhibitor Response in Lean Rheumatoid Arthritis Patients: A BMI-Stratified Pharmacogenetic Analysis

Yi-Ting Li¹, I-Chieh Chen², Chung-Mao Kao^{2,3}, Yen-Ju Chen^{2,3,4}, Wen-Nan Huang^{3,4,5}, Yi-Ming Chen^{1,2,3,4,5,6*}

1 Department of Post-Baccalaureate Medicine, College of Medicine, National Chung-Hsing University, Taichung, Taiwan

2 Department of Medical Research, Taichung Veterans General Hospital, Taichung, Taiwan

3 Division of Allergy, Immunology, and Rheumatology, Department of Internal Medicine, Taichung Veterans General Hospital, Taichung, Taiwan

4 Faculty of Medicine, National Yang-Ming Chiao Tung University, Taipei, Taiwan

5 Graduate Institute of Clinical Medicine, College of Medicine, National Chung Hsing University, Taichung, Taiwan

6 Precision Medicine Research Center, College of Medicine, National Chung Hsing University, Taichung, Taiwan

FTO基因多型性rs7195994 可預測瘦體型類風濕性關節炎患者對腫瘤壞死因子抑制劑治療反應：一項基於體重指數分層的藥物基因學研究

李宜庭、陳怡潔、高宗楙、陳彥如、黃文男、陳一銘

國立中興大學 醫學院 學士後醫學系

台中榮民總醫院 醫學研究部

台中榮總 內科部 過敏免疫風濕科

國立陽明交通大學 醫學系

國立中興大學 醫學院 臨床醫學研究所

國立中興大學 醫學院 精準醫學研究中心

Abstract

Background: Despite being central to the management of rheumatoid arthritis(RA), tumor necrosis factor inhibitors (TNFi) fail to elicit adequate clinical responses in up to 40% of patients. This highlights the need for predictive pharmacogenetic biomarkers to optimize treatment selection.

Methods: We analyzed data from 519 RA patients enrolled in the Taiwan Precision Medicine Initiative who had received TNFi therapy for ≥ 6 months and underwent genotyping. Ninety-seven SNPs linked to TNFi response were initially identified through a PubMed-based search strategy. Five variants located in immune-metabolic genes (*FTO*, *ZNF618*, *RANK*, *CD84*, and *LOC105375523*) were subsequently analyzed using univariable and multivariable logistic regression models. Subgroup analyses were stratified by body mass index (BMI) to examine interaction effects.

Results: *FTO* rs7195994, *ZNF618* rs16911006, and *LOC105375523* rs834811 were significantly associated with TNFi response. Among these, rs7195994 remained an independent predictor of non-response after multivariable adjustment (OR 0.44, 95% CI 0.22–0.87; $p = 0.019$). In stratified analyses, this association was significant among patients with BMI < 27 kg/m² ($p = 0.0267$), suggesting a potential BMI-dependent pharmacogenetic interaction.

Conclusion: *FTO* rs7195994 is a novel BMI-modulated predictor of TNFi treatment response in RA. These findings emphasize the potential utility of BMI-stratified pharmacogenetic assessment to refine individualized treatment strategies. Replication in multiethnic cohorts and functional validation are warranted.

Keywords: Rheumatoid arthritis, TNF inhibitors, *FTO* gene, Pharmacogenetics, BMI-stratified analysis, Treatment response, Single nucleotide polymorphism

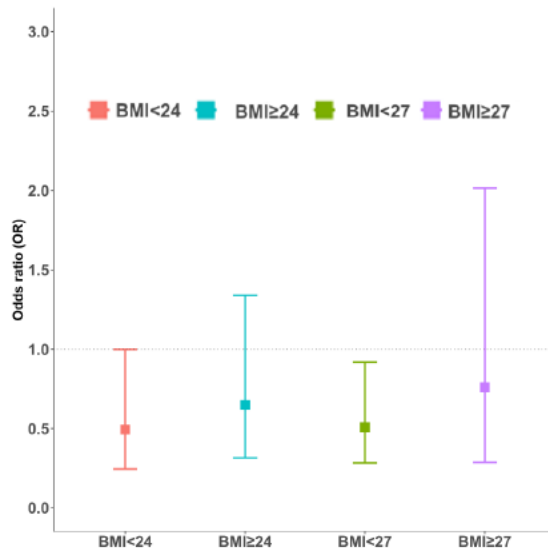
Table 1. Logistic regression analysis of patient characteristics and genetic factors associated with TNFi therapeutic efficacy

| | Univariate | | | Multivariate-Model 1 | | | Multivariate-Model 2 | | | Multivariate-Model 3 | | | Multivariate-Model 4 | | |
|------------------|------------|-----------|---------|----------------------|-----------|---------|----------------------|-----------|---------|----------------------|-----------|---------|----------------------|-----------|---------|
| | OR | 95% CI | p value | OR | 95% CI | p value | OR | 95% CI | p value | OR | 95% CI | p value | OR | 95% CI | p value |
| Age | 0.98 | 0.97-1.00 | 0.205 | 1.00 | 0.98-1.03 | 0.522 | 1.00 | 0.98-1.03 | 0.475 | 1.00 | 0.98-1.03 | 0.545 | 1.00 | 0.98-1.03 | 0.468 |
| Sex | | | | | | | | | | | | | | | |
| Female | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Male | 0.77 | 0.45-1.30 | 0.335 | 0.49 | 0.20-1.17 | 0.111 | 0.60 | 0.25-1.41 | 0.244 | 0.56 | 0.24-1.31 | 0.186 | 0.57 | 0.24-1.33 | 0.199 |
| BMI \geq 24 | 0.69 | 0.43-1.12 | 0.142 | 1.00 | 0.50-2.01 | 0.993 | 1.005 | 0.49-2.03 | 0.988 | 0.99 | 0.49-1.98 | 0.986 | 0.87 | 0.42-1.78 | 0.710 |
| Smoking | | | | | | | | | | | | | | | |
| Current smokers | 0.85 | 0.43-1.68 | 0.656 | | | | | | | | | | | | |
| Ever smoker | 0.69 | 0.22-2.19 | 0.536 | | | | | | | | | | | | |
| Disease duration | 0.96 | 0.90-1.03 | 0.300 | | | | | | | | | | | | |
| DAS28 | 0.41 | 0.33-0.52 | <0.001 | 0.45 | 0.34-0.60 | <0.001 | 0.46 | 0.35-0.61 | <0.001 | 0.47 | 0.35-0.62 | <0.001 | 0.46 | 0.35-0.61 | <0.001 |
| Laboratory test | | | | | | | | | | | | | | | |
| RF positivity | 0.64 | 0.39-1.03 | 0.066 | | | | | | | | | | | | |
| ACPA positivity | 1.53 | 0.90-2.59 | 0.110 | | | | | | | | | | | | |
| ESR (mm/hr) | 0.94 | 0.93-0.95 | <0.001 | 0.95 | 0.94-0.96 | <0.001 | 0.95 | 0.94-0.96 | <0.001 | 0.95 | 0.94-0.97 | <0.001 | 0.95 | 0.94-0.97 | <0.001 |
| CRP (mg/L) | 0.68 | 0.59-0.78 | <0.001 | 0.74 | 0.64-0.86 | <0.001 | 0.75 | 0.65-0.87 | <0.001 | 0.75 | 0.64-0.87 | <0.001 | 0.75 | 0.64-0.86 | <0.001 |
| Medication | | | | | | | | | | | | | | | |
| Glucocorticoid | 1.45 | 0.56-3.75 | 0.435 | | | | | | | | | | | | |
| Methotrexate | 1.24 | 0.59-2.61 | 0.555 | | | | | | | | | | | | |
| bDMARDs | 0.43 | 0.26-0.70 | <0.001 | 0.87 | 0.40-1.87 | 0.735 | 0.78 | 0.36-1.66 | 0.526 | 0.82 | 0.83-1.75 | 0.617 | 0.85 | 0.40-1.78 | |
| Carriers of SNPs | | | | | | | | | | | | | | | |
| rs8086340 | 0.59 | 0.37-0.95 | 0.031 | 0.50 | 0.25-1.00 | 0.051 | - | - | - | - | - | - | - | - | - |
| rs7195994 | 0.61 | 0.38-0.98 | 0.042 | - | - | - | 0.44 | 0.22-0.87 | 0.019 | - | - | - | - | - | - |
| rs834811 | 1.76 | 1.07-2.87 | 0.024 | - | - | - | - | - | - | 1.57 | 0.80-3.09 | 0.185 | - | - | - |
| rs16911006 | 0.54 | 0.34-0.87 | 0.012 | - | - | - | - | - | - | - | - | - | 0.57 | 0.29-1.13 | 0.111 |
| Comorbidities | | | | | | | | | | | | | | | |
| Dyslipidemia | 0.65 | 0.31-1.34 | 0.250 | | | | | | | | | | | | |
| Hypertension | 0.56 | 0.30-1.03 | 0.063 | 0.47 | 0.18-1.21 | 0.119 | 0.49 | 0.19-1.25 | 0.138 | 0.54 | 0.21-1.37 | 0.198 | 0.55 | 0.22-1.41 | 0.218 |
| Diabetes | 0.34 | 0.14-0.81 | 0.015 | 0.78 | 0.21-2.85 | 0.709 | 0.90 | 0.24-3.35 | 0.883 | 0.83 | 0.22-3.17 | 0.792 | 1.06 | 0.27-4.16 | 0.931 |
| CKD | 0.36 | 0.14-0.90 | 0.028 | 0.44 | 0.11-1.37 | 0.246 | 0.43 | 0.11-1.69 | 0.230 | 0.39 | 0.10-1.53 | 0.180 | 0.35 | 0.09-1.36 | 0.131 |
| CVA | 0.43 | 0.10-1.76 | 0.244 | | | | | | | | | | | | |

Multivariate: Adjusted for age, sex, DAS28, ESR, CRP, DMARD, DM, Htn, CKD.

Abbreviation: DAS28, Disease Activity Score 28; RF, rheumatoid factor; ACPA, anti-citrullinated protein antibody; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein; SNPs, single nucleotide polymorphisms; OR, odds ratio; 95% CI, 95% confidence; DMARD, Disease-Modifying Anti- Rheumatic Drug; DM, Diabetes Mellitus; Htn, Hypertension; CKD, Chronic Kidney Disease.

Figure 1. Forest Plot of rs7195994 carrier status and response to anti-TNF therapy in RA Patients stratified by BMI



Incidence of Common and Opportunistic Infections in Patients with Rheumatoid Arthritis and Psoriatic Arthritis Treated with Tofacitinib: A Retrospective Cohort Study in Taiwan

Nai-Tzu Chen^{1,2}, Kuang-Yung Huang^{1,2,3}, Chien-Hsueh Tung^{1,2,3}, Bao-Bao Hsu^{1,2}, Ming-Chi Lu^{1,2,3,4*}, Ning-Sheng Lai^{1,2,3*}

¹Department of Internal Medicine, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Dalin, Chiayi, Taiwan

²Division of Allergy, Immunology and Rheumatology, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Chiayi, Taiwan

³School of Medicine, Tzu Chi University, Hualien, Taiwan

⁴Department of Medical Research, Dalin Tzu Chi Hospital, Dalin, Buddhist Tzu Chi Medical Foundation, Dalin, Chiayi, Taiwan

接受 Tofacitinib 治療之類風濕性關節炎與乾癬性關節炎患者的尋常性與伺機性感染發生率：台灣回溯性世代研究

陳乃慈^{1,2}；黃光永^{1,2,3}；童建學^{1,2,3}；許寶寶^{1,2}；呂明錡^{1,2,3,4*}；賴寧生^{1,2,3*}

¹佛教慈濟醫療財團法人大林慈濟醫院內科部

²佛教慈濟醫療財團法人大林慈濟醫院過敏免疫風濕中心

³慈濟大學醫學系

⁴佛教慈濟醫療財團法人大林慈濟醫院研究部

Background:

To investigate the incidence and clinical characteristics of common and opportunistic infections, particularly cryptococcal infection, in patients with rheumatoid arthritis (RA) and psoriatic arthritis (PsA) receiving tofacitinib therapy in Taiwan.

Methods:

This retrospective cohort study included patients treated with tofacitinib at a regional hospital in southern Taiwan between December 1, 2013 and November 30, 2023. Patients diagnosed with RA or PsA who had received tofacitinib for more than three months were eligible. Infection events were identified through systematic medical record review, and IRs were calculated per 100 person-years.

Results:

A total of 154 patients were enrolled, with a mean follow-up of 3.45 years. The most common infection was herpes zoster (HZ) (IR 3.58 ± 0.82 per 100 person-years), followed by urinary tract infection (IR 1.32 ± 0.50 per 100 person-years) and soft tissue infections (IR 1.13 ± 0.46 per 100 person-years). Cryptococcal infections were identified in three patients (IR 0.56 ± 0.33 per 100 person-years), which is higher than rates previously reported with other immunosuppressive agents. All cryptococcal cases occurred in older women concurrently receiving corticosteroids.

Conclusion:

HZ was the most common opportunistic infection among patients undergoing tofacitinib therapy. Although cryptococcosis was infrequent, its incidence rate was elevated relative to prior reports on other immunosuppressants. These findings demonstrate the importance of close monitoring for opportunistic infections, particularly in older female patients receiving concomitant corticosteroids.

The Prevalence and Risk Factors of Sarcopenia in Patients with Rheumatoid Arthritis in Taiwan: A Cross-Sectional Study

Yu-Heng Lin¹, Jui-Hung Kao², Chieh-An Chuang¹, Kai-Chieh Chang³, Chiao-Feng Cheng⁴, Yen-Chun Lin¹, Jen-Hao Chen⁴, Shih-Hsun Lan¹, Li-Heng Huang¹, Chin-Hsiu Liu⁴, Ko-Jen Li⁴, and Song-Chou Hsieh⁴

Author Affiliation:

¹National Taiwan University Hospital Yunlin Branch, Department of Internal Medicine, Yunlin, Taiwan

²Shuang Ho Hospital, Taipei Medical University, Department of Internal Medicine, New Taipei City, Taiwan,

³National Taiwan University Hospital Yunlin Branch, Department of Neurology, Yunlin, Taiwan

⁴National Taiwan University Hospital, Department of Internal Medicine, Taipei, Taiwan

肌少症在台灣類風濕性關節炎患者中的盛行率及危險因子分析：一個橫斷面研究

林昱亨, 高瑞鴻, 莊捷安, 張楷杰, 鄭喬峯, 林彥均, 陳仁豪, 藍士勛, 黃立恒, 劉津秀, 李克仁, 謝松洲

臺灣大學醫學院附設醫院雲林分院內科部、衛生福利部雙和醫院、臺灣大學醫學院附設醫院雲林分院神經部、臺灣大學醫學院附設醫院風濕免疫科

Background

Sarcopenia, a progressive loss of skeletal muscle mass and function, is increasingly recognized in autoimmune diseases such as rheumatoid arthritis (RA). However, data in Taiwanese RA patients using the updated 2019 Asian Working Group for Sarcopenia (AWGS) criteria remain limited.

Methods

This cross-sectional study was conducted at National Taiwan University Hospital, Yunlin Branch, from October 2022 to December 2023. It included patients over 18 years old with RA who met the 2010 ACR/EULAR classification criteria. Their skeletal muscle mass (assessed by bioelectrical impedance analysis), grip strength (measured using a hand dynamometer), and physical performance (6-meter walk test and 5-time chair stand test) were evaluated. Sarcopenia was defined according to the 2019 AWGS criteria.

Results

Among the 118 patients, the median age was 60.69 years [interquartile range (IQR) 52.98–67.87], and 20.34% were male. Twelve patients (10.17%) were diagnosed with possible sarcopenia (without fulfilling criteria for sarcopenia), and 27 patients (22.88%) were diagnosed with sarcopenia. Among those with sarcopenia, 15 patients (55.56%) had severe sarcopenia. Multivariate logistic regression analysis comparing nonsarcopenia with possible sarcopenia and sarcopenia identified older age [odds ratio (OR) = 1.1, 95% confidence interval (CI): 1.05–1.16, $p = 0.00038$] and lower BMI [OR = 0.71, 95% CI: 0.58–0.84, $p = 0.00016$] as independent risk factors.

Conclusion

The prevalence of possible sarcopenia and sarcopenia in patients with RA in Taiwan is 10.17% and 22.88%. Lower BMI and older age were the most important risk factors.

Table 1. Basic Characteristics

| Characteristics | Nonarropenia (n= 79) | Possible sarcopenia (without sarcopenia) (n= 12) | Sarcopenia (n= 27) | p value |
|---|----------------------|--|--------------------|---------|
| Male sex (%) | 17 (21.5%) | 3 (25%) | 4 (14.8%) | 0.68 |
| Age at enrollment (median [IQR]) | 58.2 (51.7, 63.1) | 65.9 (55.4, 77.0) | 65.7 (62.3, 78.1) | <0.001* |
| Age >= 65 (%) | 14 (17.7%) | 6 (50%) | 14 (51.9%) | <0.001* |
| Disease duration (median [IQR]) | 3.1 (0.8, 9.7) | 6.2 (1.7, 9.5) | 6.4 (0.4, 17.1) | 0.54 |
| Body height (median [IQR]) | 160 (156.3, 164.9) | 159 (151.9, 164.3) | 153 (149, 156.5) | <0.001* |
| Body weight (median [IQR]) | 63.3 (55.7, 71.3) | 57.9 (52.2, 63.2) | 48.1 (45.4, 53.6) | <0.001* |
| BMI (kg/m ²) (median [IQR]) | 24.8 (21.6, 26.8) | 23.1 (21.2, 25.3) | 20.6 (18.8, 22.6) | <0.001* |
| BMI < 18.5 (%) | 1 (1.3%) | 0 (0%) | 5 (18.5%) | 0.006* |
| BMI 18.5 ~ 24 (%) | 36 (45.6%) | 8 (66.7%) | 19 (70.4%) | 0.052 |
| BMI >= 24 (%) | 42 (53.2%) | 4 (33.3%) | 3 (11.1%) | <0.001* |
| Smoking (%) | 11 (13.9%) | 1 (8.3%) | 0 (0%) | 0.1 |
| Underlying disease | | | | |
| Hypertension | 24 (30.4%) | 7 (58.3%) | 10 (37%) | 0.16 |
| DM | 10 (12.7%) | 1 (8.3%) | 6 (22.2%) | 0.43 |
| Hyperlipidemia | 16 (20.3%) | 3 (25%) | 5 (18.5%) | 0.88 |
| CAD | 5 (6.3%) | 1 (8.3%) | 4 (14.8%) | 0.28 |
| CVA | 3 (3.8%) | 1 (8.3%) | 1 (3.7%) | 0.61 |
| Lung disease [#] | 4 (5.1%) | 0 (0%) | 5 (18.5%) | 0.072 |
| CKD >= stage III | 3 (3.8%) | 1 (8.3%) | 2 (7.4%) | 0.51 |
| Osteoporosis | 4 (5.1%) | 2 (16.7%) | 2 (7.4%) | 0.29 |
| RF positive | 58 (73.4%) | 10 (83.3%) | 25 (93%) | 0.090 |
| Ant-CCP positive [†] | 35 (44.3%) | 8 (67%) | 15 (56%) | 0.26 |
| CRP (mg/dL) (median [IQR]) | 0.11 (0.05, 0.30) | 0.14 (0.06, 0.26) | 0.16 (0.05, 0.50) | 0.73 |
| ESR (mm/h) (median [IQR]) | 10 (6, 17) | 7 (4, 19) | 16 (8, 34) | 0.032* |
| DAS-28 ESR (median [IQR]) | 2.78 (2.23, 3.39) | 2.95 (1.85, 3.79) | 3.22 (2.67, 4.64) | 0.033* |
| Disease activity | | | | |
| Remission | 32 (40.5%) | 5 (41.7%) | 4 (14.8%) | 0.037* |
| Low | 23 (29.1%) | 2 (16.7%) | 9 (33.3%) | 0.63 |
| Moderate | 21 (26.6%) | 4 (33.3%) | 12 (44.4%) | 0.22 |
| High | 3 (3.8%) | 1 (8.3%) | 2 (7.4%) | 0.51 |
| Current medicine | | | | |
| Glucocorticoid (%) | 32 (40.5%) | 9 (75%) | 16 (59.3%) | 0.036* |
| NSAIDs (%) | 53 (67.1%) | 6 (50%) | 17 (63%) | 0.53 |
| Methotrexate (%) | 47 (59.5%) | 6 (50%) | 14 (51.9%) | 0.69 |
| Hydroxychloroquine | 62 (78.5%) | 11 (91.7%) | 24 (88.9%) | 0.39 |
| Sulfasalazine | 40 (50.6%) | 5 (41.7%) | 12 (44.4%) | 0.76 |
| Leflunomide | 12 (15.2%) | 5 (41.7%) | 4 (14.8%) | 0.1 |
| Cyclosporine | 1 (1.3%) | 0 (0%) | 1 (3.7%) | 0.55 |
| Biologics (%) | 28 (35.4%) | 4 (33.3%) | 14 (51.9%) | 0.31 |

¹: n (%); Median (Q1, Q3)

²: Fisher's exact test; Kruskal-Wallis rank sum test; Pearson's Chi-squared test

[#]: including chronic obstruction pulmonary disease, asthma, or interstitial lung disease.

*p < 0.05

RA: Rheumatoid arthritis; BMI: Body mass index; DM: Diabetes mellitus; CAD: Coronary artery disease; CVA: Cerebrovascular accident; CKD: Chronic kidney disease; RF: Rheumatoid factor; DAS28-ESR: disease activity score 28 ESR; anti-CCP; Anti-cyclic citrullinated peptide antibodies; NSAIDs: Non-steroidal anti-inflammatory drugs; Biologics: including biologic disease-modifying anti-rheumatic drugs (bDMARDs) and targeted synthetic DMARDs (tsDMARDs)

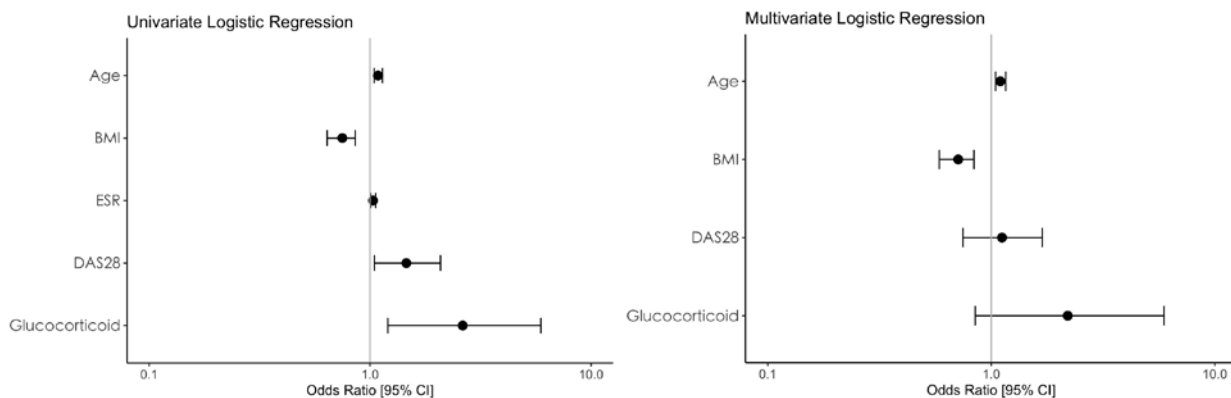


Figure 1. Logistic regression of potential factors related with possible sarcopenia and sarcopenia in the patients with rheumatoid arthritis. A. Univariate logistic regression. B. Multivariate logistic regression.

Correlation Between Bone Mineral Density and Trabecular Bone Score in Patients with Rheumatoid Arthritis: A Registry-Based Study

Pei-Xuan Wang, Yen-Lun Tai, Tien-Tsai Cheng, Chung-Yuan Hsu, Jia-Feng Chen, Wen-Chan Chiu, Yu-Jih Su, Shan-Fu Yu, Han-Ming Lai, Ying-Chou Chen

Division of Rheumatology, Allergy, and Immunology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan

類風濕性關節炎病患骨質密度與骨小樑分數之相關性：一項基於登錄資料的研究

王佩璇, 戴諺綸, 鄭添財, 許鐘元, 陳嘉峯, 邱文燦, 蘇昱日, 尤珊富, 賴漢明, 陳英州

高雄長庚紀念醫院 風濕過敏免疫科

Background: This study investigated the correlation between bone mineral density (BMD) and trabecular bone score (TBS) in rheumatoid arthritis (RA) patients.

Materials and Methods: This interim analysis utilized data from an ongoing RA-related osteoporosis registry at Chang Gung Memorial Hospital, Kaohsiung, Taiwan. Consecutive RA patients fulfilling 1987 ACR or 2010 ACR/EULAR criteria enrolled since September 2014. BMD measurements at lumbar spine (L1-L4), total hip, and femoral neck (FN) were obtained at baseline and 3-year intervals. TBS measurements at L1-L4 were recorded concurrently with BMD assessments from 2019 onwards. Pearson's correlation coefficients assessed relationships between TBS and BMD at all sites.

Results: As of the end of September 2023, a total of 710 patients were enrolled in the registry. Among them, 405 RA patients who met the inclusion criteria were included in the current analysis. Mean age was 55.4 ± 10.1 years, with 85.6% female. Seropositivity rates were 64.5% for rheumatoid factor and 68.8% for anti-cyclic citrullinated peptide antibodies. Correlation coefficients between TBS and BMD were: lumbar spine (L1-L4) $r = 0.552$ ($p < 0.001$) (Fig 1), total hip $r = 0.363$ ($p < 0.001$) (Fig 2), and femoral neck $r = 0.422$ ($p < 0.001$) (Fig 3).

Conclusion: A strong positive correlation existed between lumbar spine TBS and BMD in RA patients, while only moderate correlations were observed at hip and femoral neck. These findings suggest that vertebral TBS may not serve as a reliable surrogate marker for assessing bone quality at the hip in RA patients.

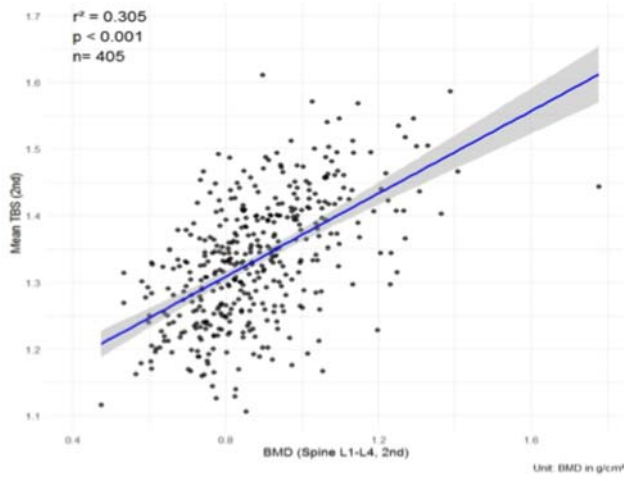


Fig. 1 Correlation between BMD (L1-L4) and TBS

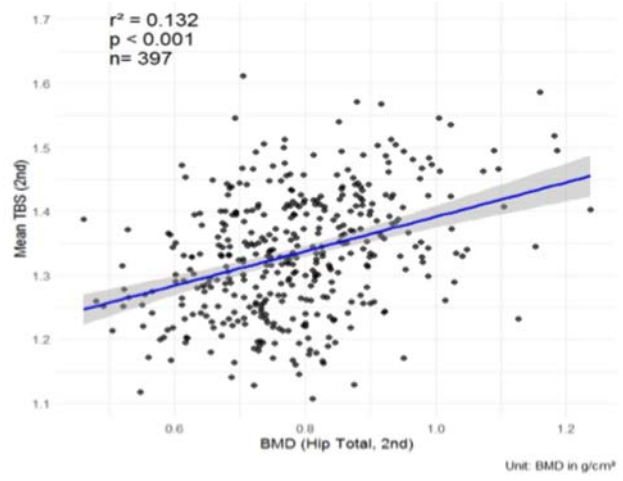


Fig. 2 Correlation between BMD (hip, total) and TBS

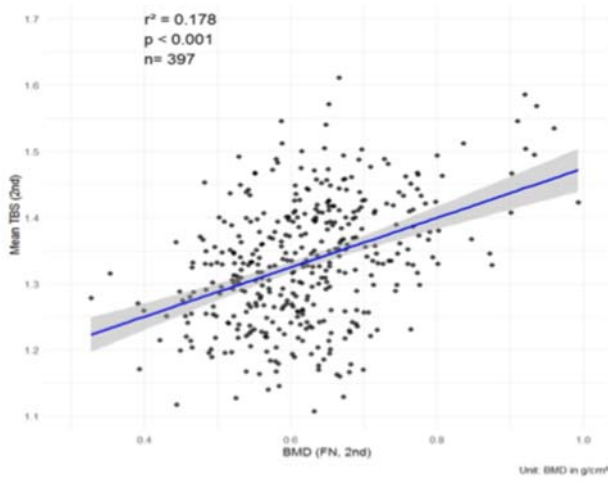


Fig. 3 Correlation between BMD (femoral neck) and TBS

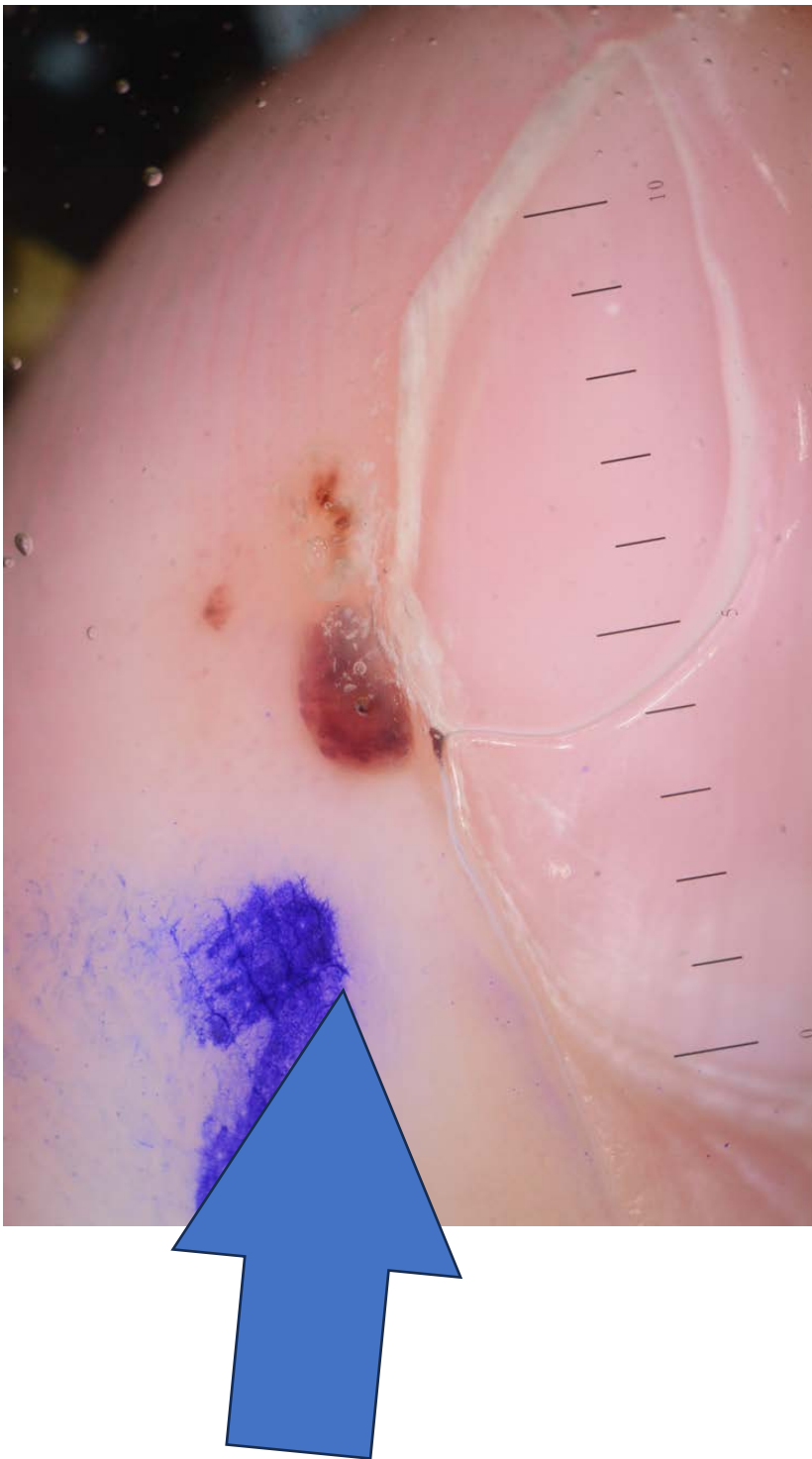
海報摘要 TCR08

Clinical Images: Bywaters Lesions in Early Seropositive Rheumatoid Arthritis

Chung-Yuan Hsu 許鐘元

Division of Rheumatology, Allergy, and Immunology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan. 高雄長庚醫院風濕科





A 46-year-old female engineer with newly diagnosed seropositive rheumatoid arthritis (RA) presented with painful skin lesions on her digits over a six-month period. Initially presumed to be warts and treated with cryotherapy, the lesions showed an on-and-off course—tender and erythematous when active, later black and crusted. They were localized to the index and middle fingers bilaterally, without lower extremity involvement (Bywaters lesions over the index finger. A: Unaltered view; B: 20× magnification)

The clinical features, in the absence of systemic symptoms, were consistent with Bywaters lesions—cutaneous signs of rheumatoid vasculitis. Typically seen in patients with high RF titers, these lesions are purpuric papules that can lead to infarction near nail folds. Although rare (<1% of RA cases), their recognition is essential to avoid misdiagnosis and unnecessary treatment.

Management is centered on optimizing control of the underlying RA. Specific therapy for these benign vasculitic lesions is usually unnecessary unless systemic involvement arises.

From Misdiagnosis to Clarity: A Case of Overlapping Rheumatoid Arthritis, Antisynthetase Syndrome, and Sjögren's Syndrome – The Importance of Thorough Clinical Evaluation

Wan-Hao Tsai, MD¹

¹ Division of Immunology and Rheumatology, Fu Jen Catholic University Hospital, New Taipei City, Taiwan

² Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

蔡万濠

天主教輔仁大學附設醫院風濕免疫科

國立臺灣大學醫學院附設醫院風濕免疫科

Abstract

Background:

Rheumatoid arthritis (RA) is a common autoimmune disease; however, the possibility of overlapping autoimmune syndromes should not be overlooked. Misattributing new symptoms to RA progression without reassessment may delay appropriate diagnosis and management.

Case Summary:

We present a 41-year-old male with a prior RA diagnosis who developed progressive proximal muscle weakness, foamy urine, and lower limb edema after discontinuing medication. Detailed re-evaluation revealed signs of dermatomyositis, positive anti-Jo-1 and anti-SSA antibodies, and interstitial lung disease. Sicca symptoms and abnormal sialoscintigraphy confirmed Sjögren's syndrome. He was diagnosed with overlapping rheumatoid arthritis, antisynthetase syndrome, and Sjögren's syndrome. Treatment with rituximab led to significant clinical and biochemical improvement.

Conclusion:

This case highlights the importance of maintaining diagnostic vigilance in autoimmune diseases. Thorough clinical assessment and an open-minded approach are crucial for identifying overlapping syndromes and optimizing patient outcomes.

Introduction

Rheumatoid arthritis (RA) is a well-established autoimmune disease; however, overlapping syndromes involving other connective tissue diseases can complicate the clinical course and diagnosis. Antisynthetase syndrome (ASSD) and Sjögren's syndrome (SS) are among such conditions that may coexist but are often under-recognized, especially when initial symptoms are attributed solely to RA. We present a case where detailed re-evaluation led to the recognition of overlapping antisynthetase syndrome and Sjögren's syndrome in a patient with a prior diagnosis of RA, emphasizing the importance of diagnostic vigilance.

Case presentation

A 41-year-old man with a prior diagnosis of rheumatoid arthritis (RA), established approximately six months earlier, presented to our rheumatology outpatient clinic for further evaluation of new-onset symptoms. He had discontinued his prescribed immunosuppressive therapy for about three months before presentation.

One month prior to his visit, he began experiencing progressive proximal muscle weakness, predominantly affecting the upper and lower limbs, accompanied by foamy urine and lower extremity edema. He sought initial evaluation at the family medicine and nephrology outpatient clinics, where significant proteinuria was detected (urine albumin-to-creatinine ratio 74 mg/g; urine protein-to-creatinine ratio 1615 mg/g). Given his history of autoimmune disease, he was subsequently referred to our rheumatology service.

On examination, he was afebrile with stable vital signs. Physical examination revealed symmetrical Gottron's sign over the bilateral metacarpophalangeal (MCP) joints, proximal interphalangeal (PIP) joints, and nasal area; notable lower limb edema (grade 2+ to 3+); and erythematous rashes over the abdomen and back (V sign and shawl sign). Neurologic examination showed marked proximal muscle weakness, graded 3/5 in the upper limbs and 0/5 in the lower limbs. He also reported an unintentional weight loss of 6 kg over the preceding months.

Laboratory investigations revealed elevated muscle enzymes (creatinine kinase and lactate dehydrogenase) and inflammatory markers (C-reactive protein and ferritin). Autoimmune serologies were positive for anti-Jo-1 antibody, anti-SSA antibody, and anti-ENA screening. Electromyography demonstrated myopathic changes,

and high-resolution computed tomography of the chest revealed interstitial lung disease (Figure 1). Additionally, the patient reported sicca symptoms, with abnormal findings on both sialoscintigraphy and Schirmer's test, supporting a diagnosis of Sjögren's syndrome.

He was admitted to the rheumatology ward for further management. During hospitalization, no episodes of fever were noted. Given the diagnosis of overlapping rheumatoid arthritis, antisynthetase syndrome, and Sjögren's syndrome, rituximab therapy was initiated. Follow-up laboratory assessments showed marked improvement in muscle enzyme levels, inflammatory markers (Figure 2), and resolution of proteinuria. His muscle strength gradually improved with ongoing therapy.

Conclusion

This case underlines the necessity for clinical vigilance and comprehensive evaluation, even in patients with known autoimmune diseases. An initial diagnosis should guide but not limit the physician's diagnostic thinking. Detailed history-taking, careful examination, and targeted investigations are vital for uncovering overlapping autoimmune conditions, leading to timely and effective management.

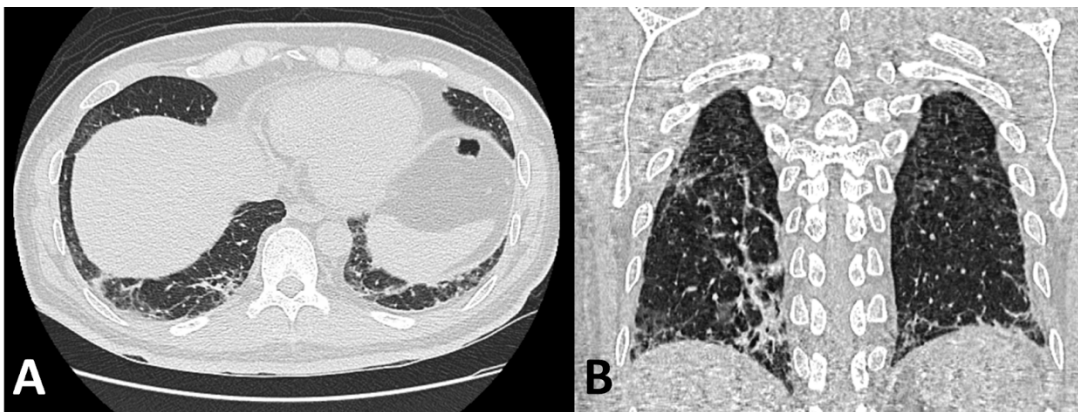


Figure 1. Chest CT showed bilateral lower lobe reticular pattern at (A) Coronal view (B) Sagittal view.

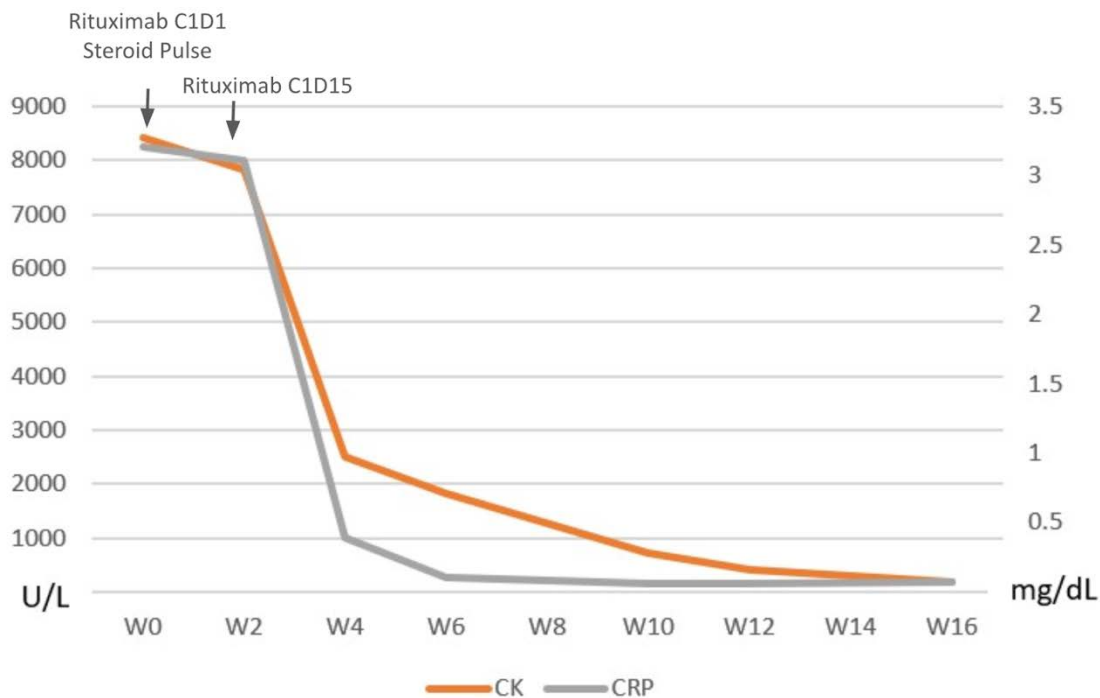


Figure 2. Trend chart of CK and CRP level. (CK: creatine kinase; CRP: C-Reactive Protein)

海報摘要 TCR10

Kaposi's Sarcoma in Patient with Rheumatoid Arthritis Receiving Abatacept: A Case Report

Yen-Lun Tai¹, Yu-Ting Lin², Chung-Yuan Hsu¹, Tien-Tsai Cheng¹

¹Division of Rheumatology, Allergy and Immunology, Department of Internal Medicine, Kaohsiung Chang Gung Memorial Hospital, Taiwan

²Division of Rheumatology, Allergy and Immunology, Taichung Da Li Jen Ai Hospital, Taiwan

使用Abatacept 治療之類風濕性關節炎患者發生卡波西氏肉瘤：個案報告

戴諺綸¹, 林昱廷², 許鐘元¹, 鄭添財¹

1 高雄長庚紀念醫院內科部風濕過敏免疫科

2 台中大里仁愛醫院風濕過敏免疫科

Background: Kaposi's sarcoma (KS) is a rare vascular tumor associated with human herpesvirus-8 infection and typically occurs in immunocompromised patients, including those with HIV/AIDS or organ transplant recipients and those receiving immunosuppressive therapy. The association between rheumatoid arthritis (RA) treatment and KS development remains uncommon but clinically significant.

Case Presentation: An 86-year-old male with no previous systemic diseases presented to our outpatient clinic in June 2024 with polyarthralgia affecting hands, wrists, elbows, right hip, and knee, accompanied by morning stiffness. Laboratory evaluation revealed elevated acute-phase reactants, positive rheumatoid factor and anti-citrullinated peptide antibodies. He was diagnosed with RA based on the ACR/EULAR 2010 classification criteria. Initial treatment with prednisolone 5mg twice daily and hydroxychloroquine 200mg daily was started in June 2024. Due to muscle soreness from hydroxychloroquine, treatment was switched to methotrexate 10mg per week in July 2024 but was discontinued after two weeks due to general weakness. The patient subsequently received self-paid subcutaneous abatacept biweekly from July 2024 to January 2025. However, in January 2025, the patient was hospitalized for suspected pneumonia. During admission, family reported chronic wounds with thick crusts over bilateral feet since November 2024. Dermatological evaluation and incisional biopsy confirmed the diagnosis of Kaposi's sarcoma.

Conclusion: This case highlights the importance of vigilant monitoring for opportunistic malignancies, in patients receiving immunosuppressive therapy for RA. Clinicians are encouraged to consider the possibility of malignancies such as KS in RA patients presenting with chronic skin lesions, especially those receiving biologic therapies.

海報摘要 TCR11

Generalized tocilizumab hypersensitivity resolves after switching from subcutaneous to intravenous administration in rheumatoid arthritis.

類風濕性關節炎患者的全身性 Tocilizumab 過敏反應在皮下注射改為靜脈注射後緩解。

I-Shu Chen, Ko-Jen Li, Cheng-Hsun Lu

陳亦抒、李克仁、呂政勳

Division of Allergy, Immunology and Rheumatology, National Taiwan University Hospital

國立台灣大學醫學院附設醫院風濕免疫過敏科

Background

Tocilizumab (TCZ) is widely prescribed for rheumatoid arthritis (RA). Injection-site reactions (ISRs) are frequent with subcutaneous (SC) TCZ, whereas delayed hypersensitivity has been reported with intravenous (IV) infusion. We describe two patients whose generalized cutaneous hypersensitivity during SC therapy resolved after conversion to IV TCZ.

Case reports

Case 1

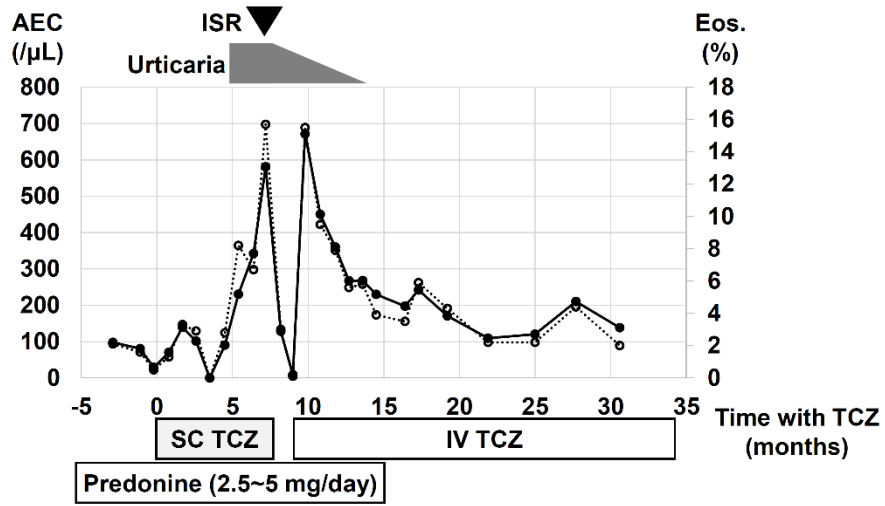
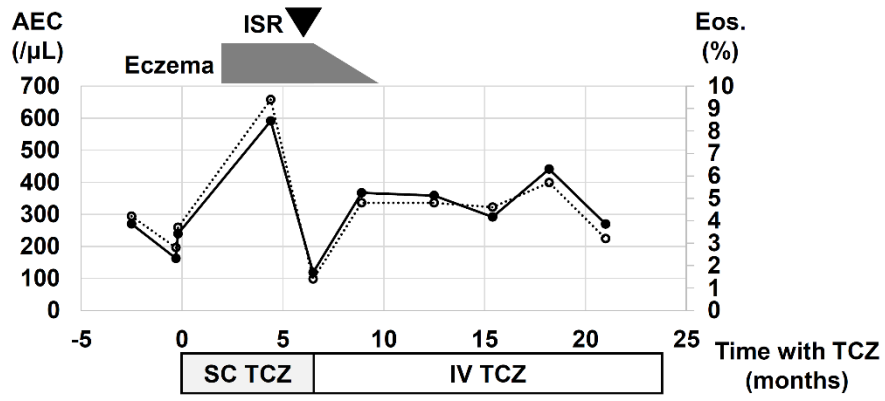
A 67-year-old woman with RA was switched to SC TCZ after inadequate response to etanercept, rituximab, and tofacitinib. At month 5 she developed generalized pruritic papules and eosinophilia; daily desloratadine and renewed glucocorticoids failed to prevent post-injection flares (Figure 1A). ISR appeared in month 7. Given sustained articular response, therapy was changed to IV TCZ, leading to gradual disappearance of urticaria and persistent remission for >30 months.

Case 2

A 78-year-old woman with destructive RA began SC TCZ after inadequate response to adalimumab and tofacitinib. Within two months she developed generalized eczematous eruptions with transient eosinophilia, recurring after each injection despite antihistamines and topical steroids (Figure 1B); ISR emerged in month 6. Switching to IV TCZ induced complete and durable remission for >18 months.

Discussion

IL-6 blockade can potentially skew immunity toward Th2. ISRs are common with SC tocilizumab, whereas generalized hypersensitivity reactions are rarely reported. To our knowledge, resolution of generalized hypersensitivity after an SC-to-IV switch has not been documented previously. Potential contributors include (1) protein aggregation in the concentrated SC formulation, (2) buffer-specific immunogenicity, and (3) charge-variant differences influencing immunogenicity. Thus, RA patients who respond to SC TCZ well but develop hypersensitivity may tolerate IV dosing better.

A**B**

—●— AEC (cells/μL) - - -○- - - Eos. (%)

Figure 1. Time course of eosinophil percentage (Eos. %), absolute eosinophil count (AEC), generalized cutaneous hypersensitivity, and injection-site reactions (ISRs) during subcutaneous (SC) and intravenous (IV) tocilizumab (TCZ) therapy in Case 1 (**A**) and Case 2 (**B**).

海報摘要 TCR12

Methotrexate-Associated Lymphoproliferative Disorders in Rheumatoid Arthritis: A Case Series and Literature Review

Ping-You Shen¹, Sheng-Hong Lin^{1,2}, Jui-Hung Kao¹, I-Ping Lee¹, Chin-Fang Su¹, Yu-Sheng Chang^{1,2}

1Division of Allergy, Immunology, and Rheumatology, Department of Internal Medicine, Shuang Ho Hospital, Taipei Medical University, New Taipei City, Taiwan

2Division of Allergy, Immunology and Rheumatology, Department of Internal Medicine, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

類風濕性關節炎中與甲氨蝶呤相關的淋巴增生性疾病：病例系列與文獻回顧

沈品佑¹, 林聖閔^{1,2}, 高瑞鴻¹, 李苡萍¹, 蘇勤方¹, 張又升^{1,2}

1 衛生福利部雙和醫院, 內科部, 風濕免疫過敏科

2 臺北醫學大學醫學院, 醫學系, 內科部, 過敏風濕免疫科

Background: To investigate the clinical characteristics, risk factors, histological subtypes, and outcomes of methotrexate-associated lymphoproliferative disorders (MTX-LPDs) in rheumatoid arthritis (RA) patients using the fifth edition of the Classification of Haematolymphoid Tumours (WHO-HAEM5), revised in 2022, framework.

Materials and Methods: A retrospective review of pathology records from January 2009 to March 2025 was conducted at Shuang-Ho Hospital. Nine RA patients with MTX-LPD were identified. Clinical data, laboratory findings, treatment histories, and outcomes were analyzed and compared with existing literature. (table1)

Results: All nine patients received MTX, with a mean exposure of 8.7 years. Most patients exhibited Epstein-Barr virus (EBV) positivity, elevated lactate dehydrogenase (LDH), and lymphopenia. Histological subtypes included polymorphic LPD, diffuse large B cell lymphoma (DLBCL), and reactive hyperplasia. Three patients achieved remission after MTX withdrawal, while others required further treatment or had poor outcomes. Risk factors included prolonged RA duration, older age, high MTX dose, and low absolute lymphocyte count. (table 2)

Conclusion: MTX-LPDs in RA patients often present with EBV positivity and may regress after MTX cessation. The WHO-HAEM5 classification aids in subtype identification and prognostication. Careful monitoring of high-risk patients and timely MTX discontinuation are critical for favorable outcomes.

Table 1 Baseline medications and laboratory findings at diagnosis of LPD in RA

| Patient | Steroid dosage (years) | Methotrexate dosage (years) | Hydroxychloroquine dosage (years) | Other DMARDs dosage (years) | WBC | Lymphocyte count | Hb | PLT | CRP/ESR | LDH |
|---------|----------------------------|-----------------------------|-----------------------------------|-----------------------------|-------|------------------|------|----------|---------|-----|
| 1 | NA | 15mg (0.5) | 400mg (0.5) | | NA | 3220 | 644 | 8191k | 0.49/98 | 383 |
| 2 | 5mg (2) | 7.5mg (10) | 400mg (14) | SSZ 2000mg/day (10) | 12010 | | 3531 | 10.2507k | 1.04/28 | 497 |
| 3 | NA | 15mg (6) | NA | | NA | 7870 | 228 | 7.991k | 0.54/56 | 611 |
| 4 | NA | 15mg (20) | 400mg (20) | ETN 25mg Q2W (0.5) | 2690 | | 586 | 10.9191k | 5.37/NA | 350 |
| 5 | 10mg (1) | 15mg (20) | 400mg (20) | | NA | 4200 | 714 | 11166K | 4.22/84 | NA |
| 6 | NA | 15mg (6) | 400mg (10) | | NA | 7100 | 284 | 13.5197K | 7/65 | NA |
| 7 | NA | 15mg (3.3) | 400mg (7) | SSZ 2000mg/day (6) | 6200 | | 558 | 15.1233K | 1.44/2 | NA |
| 8 | NA | 15mg (3.5) | 400mg (3.5) | CsA 100mg/day (2.5) | 8600 | | 1737 | 14.8168K | 2/47 | 156 |
| 9 | 2.5mg(3) 15mg(2), 7.5mg(7) | | 400mg(3) | GOL(2), ABA(6) | 5960 | | 1587 | 8.9255k | 6.75/5 | 230 |

Table 2 Treatment and outcome of LPD in RA

| Patient | MTX cessation | Interval from cessation to other treatments (RTX, C/T) | Final outcomes |
|---------|----------------------|--|-----------------------|
| 1 | Progression | 5 months | Died |
| 2 | Persistence | 11 months | Survival (regression) |
| 3 | Persistence | NA | Died |
| 4 | Persistence | NA | Lost follow-up |
| 5 | Persistence | NA | Lost follow-up |
| 6 | Remission (1 month) | NA | Survival (remission) |
| 7 | Remission (2 months) | NA | Survival (remission) |
| 8 | Remission (9 months) | NA | Survival (remission) |
| 9 | Persistence | 2 months | Survival |

海報摘要 TCR13

A diagnostic journey through treatment response: A case of rheumatoid arthritis-associated organizing pneumonia treated with tocilizumab

Jui-Lin Huang¹, Chin Fang Su¹

¹Division of Allergy, Immunology, and Rheumatology, Department of Internal Medicine, Shuang Ho Hospital, Taipei Medical University, New Taipei City, Taiwan

透過治療反應進行鑑別診斷：一例類風濕性關節炎相關性器質化肺炎使用 tocilizumab 治療的病例報告

黃瑞霖¹，蘇勤方¹

¹衛生福利部雙和醫院（委託臺北醫學大學興建經營）內科部風濕免疫科

A 59-year-old woman with rheumatoid arthritis (RA), treated with rituximab and leflunomide for the past five years, presented to the emergency department in Jul, 2023 with a two-week history of intermittent fever, chills, shortness of breath, and dry cough.

CXR revealed scattered opacities in both lungs. However, she showed no improvement after a 5-day course of levofloxacin for suspected atypical pneumonia. HRCT in Aug 2023 demonstrated bilateral patchy and geographic ground-glass opacities. Bronchoalveolar lavage fluid analysis revealed significant lymphocytosis, with a predominance of CD8+ cells. Intravenous methylprednisolone was administered for suspected hypersensitivity pneumonitis, given her history of exposure to cleansing spray. This treatment resulted in partial regression of the lung infiltrates and led to her discharge from the hospital in Oct 2023.

However, during steroid tapering over the next two months, the symptoms relapsed. A second BAL found no evidence of infection but persistent lymphocytosis. Given the suspicion of leflunomide-induced pneumonitis, leflunomide was discontinued, followed by 11-day cholestyramine, methylprednisolone pulse therapy, and azathioprine in Nov 2023.

Despite three months of treatment, her symptoms persisted. A follow-up HRCT in Dec 2023 showed progressive bilateral patchy consolidation. After an interdisciplinary discussion, the diagnosis was revised to RA-associated organizing pneumonia (OP). Monthly tocilizumab was initiated in Feb 2024, and her symptoms improved rapidly within one month. Follow-up HRCT in May 2024 showed complete resolution of the lung lesions.

OP is a relatively uncommon manifestation of RA-ILD, and identifying its exact etiology in patients with RA can be challenging. In this case, leflunomide-induced pneumonitis was excluded as no response to washout therapy. The diagnosis of RA-OP was supported by a favorable response to tocilizumab. To the best of our knowledge, this is the first report of RA-OP successfully treated with tocilizumab monotherapy.

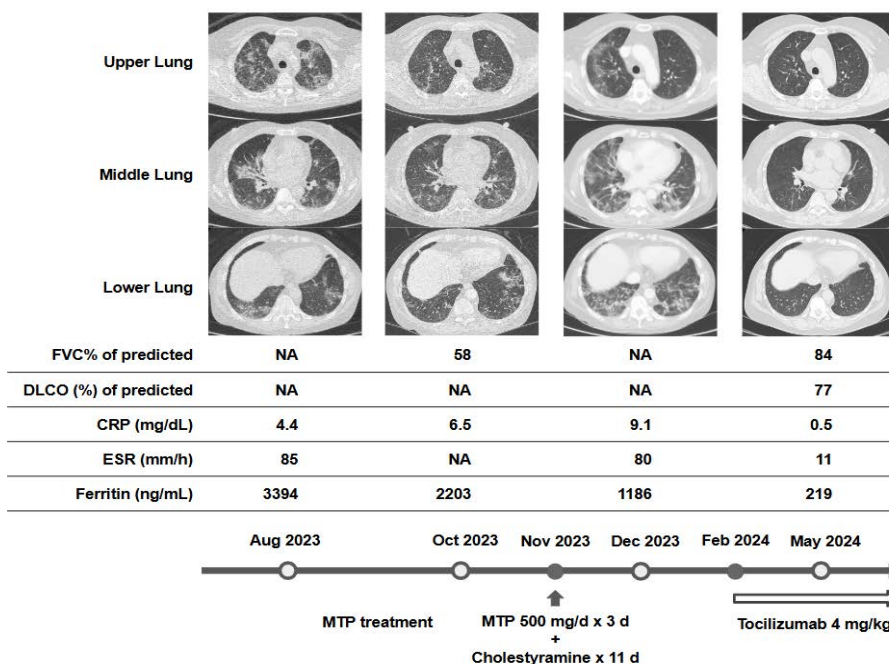


Fig.1, Chest CT series and clinical course of the patient. Aug 2023, initial presentation. Oct 2023, partial response to steroid therapy. Dec 2023, lung lesions exacerbated despite pulse therapy and cholestyramine washout. May 2024, complete remission after tocilizumab. CRP: C-reactive protein, DLCO: Diffusing capacity of the lung for carbon monoxide, ESR: Erythrocyte Sedimentation Rate, FVC: Forced Vital Capacity, MTP: methylprednisolone

海報摘要 TCR14

Efficacy and safety of allogenic adipose-derived mesenchymal stem cells (AD-MSCs) therapy in CTD patients with progressive fibrosing of interstitial lung disease (PF-ILD): Interim analysis

Der-Yuan Chen^{1,2}, Po-Ku Chen^{1,2}, Shih-Hsin Chang^{1,2,3}, Oscar Kuang-Sheng Lee^{4,5}, Chien-Chung Huang^{1,2}, Joung-Liang Lan^{1,2}

1Rheumatology and Immunology Center, China Medical University Hospital;

2College of Medicine, China Medical University, Taichung, Taiwan

3Ph.D. Program in Translational Medicine, National Chung Hsing University, Taiwan

4Department of Biotechnology and Medicine, MacKay Memorial Hospital, Taiwan

5Department of Orthopedics, MacKay Memorial Hospital, Taiwan

以異體脂肪組織幹細胞治療結締組織疾病患者併發進行性纖維化間質肺病變之有效性與安全性:期中分析

陳得源、陳柏谷、張詩欣、李光申、黃建中、藍忠亮

中國醫大附醫風濕免疫中心、中國醫藥大學、中興大學轉譯醫學博士學程、馬偕醫院生物科技醫學部、馬偕醫院骨科部

Background: Despite the use of immunosuppressants (IS) and antifibrotic agents in treating connective tissue disease-associated interstitial lung disease (CTD-ILD), some patients show progressive fibrosis (PF) in their ILD (PF-ILD). Given high severity and mortality in CTD patients with PF-ILD, it is an unmet need to provide alternative and effective treatment. The effects of adipose tissue-derived mesenchymal stem cell (AD-MSCs) therapy on PF-ILD in CTD have yet to be characterized. In this phase I/II dose-escalation trial, we analyzed the effects of allogenic AD-MSCs therapy in CTD patients with PF-ILD.

Methods: Seven PF-ILD patients receiving both IS and antifibrotic therapy were enrolled: 3 systemic sclerosis (SSc) and 4 idiopathic inflammatory myopathies (IIM). The first three patients received one-dose intravenous administration of AD-MSCs treatment (1x10⁶cells/kg) (low-dose group). Another four received intermediate-dose AD-MSCs 1x10⁶cells/kg once monthly for consecutive two months. Safety variables were recorded, and the effects were assessed at week 12 and week 24.

Results: Median follow-up period was 10 months (range, 3-14). Two serious adverse events that were unrelated to AD-MSCs therapy: one had chlamydia pneumonia, and another died of aspiration pneumonia. Mean levels of ferritin and KL-6 decreased by 73.5ng/mL (47.8%) and 206U/mL (10.9%), respectively, assessed at week 24. Mean scores of St. George's Respiratory-Questionnaire (SGRQ) decreased by 135 (13.2%); Mean SF-36 (physical/psychiatric domain) improved by 20.7%/36.3%, respectively; Mean 6MWD increased by 24 meter (8.6%); but little change in FVC (52.3±17.6% versus 53.0±15.6%) or DLCO (32.3±18.5% versus 32.0±12.2%).

Conclusion: Allogenic AD-MSCs therapy appeared to be feasible, tolerable, and efficacious in CTD patients with PF-ILD.

異體脂肪間質幹細胞治療之執行流程



捐贈者合適
性血液檢測



捐贈者脂肪
組織採集



幹細胞分離
與擴增培養



AD-MSC
細胞凍存



中間產品
(DS)檢測



DS核准放
行儲存庫



細胞解凍
充填



最終產品(DP)
檢測



DP核准放
行與運送



細胞治療

[TFDA:試驗編號 CTD-ILD-01;捐贈者與受試者 IRB: CMUH110-REC1-042]

海報摘要 TCR15

Survival and economic burden of CTD-associated pulmonary hypertension in real-world practice

Ying-Ming Chiu^{1,2,3}, Der-Yuan Chen^{4,5,6}

¹Department of Allergy, Immunology, and Rheumatology, Tungs' Taichung MetroHarbor Hospital, Taichung, Taiwan

²Department of Post-Baccalaureate Medicine, College of Medicine, National Chung Hsing University, Taichung, Taiwan

³Department of Nursing, Jen Teh Junior College of Medicine, Nursing and Management, Miaoli, Taiwan

⁴Rheumatology and Immunology Center, China Medical University Hospital, Taichung, Taiwan

⁵Translational Medicine Laboratory, Rheumatology and Immunology Center, China Medical University Hospital, Taichung, Taiwan

⁶School of Medicine, China Medical University, Taichung, Taiwan

真實世界資料下結締組織病相關肺高壓患者之生存狀況與經濟負擔

邱瑩明, 陳得源

童綜合醫療社團法人童綜合醫院過敏免疫風濕科、國立中興大學後醫學系、仁德醫護管理專科學校護理科、中國醫藥大學附設醫院風濕免疫中心、中國醫藥大學附設醫院風濕病研究中心轉譯研究室、中國醫藥大學醫學院

Background: Pulmonary hypertension (PH) is a severe complication of connective tissue diseases (CTD), associated with early mortality and high healthcare costs. This study evaluated life expectancy (LE), loss-of-LE, and lifetime medical costs (LMC) in PH patients with or without CTD and interstitial lung disease (ILD).

Methods: We analyzed data from Taiwan's National Health Insurance Research Database (2004–2021), identifying newly diagnosed PH patients treated with PH-specific therapy. Survival was extrapolated using a spline-based model; LMC was estimated by weighting monthly expenditures with survival probability.

Results: Among 3,395 PH patients (mean age 57.0 years), the average LE was 15.0 years, with a loss-of-LE of 14.4 years. Compared to non-CTD patients, CTD patients had greater loss-of-LE (22.97 vs. 16.34 years) and higher LMC (US\$178,697 vs. US\$52,061). SLE patients had the highest loss-of-LE (31.09 years). Advanced PH therapy was associated with higher loss-of-LE and LMC than sildenafil monotherapy (23.74 vs. 14.98 years; US\$612,634 vs. US\$102,630). Patients with ILD had worse survival (LE: 4.72 vs. 13.66 years) and greater loss-of-LE (20.22 vs. 16.35 years).

Conclusion: CTD-associated PH, especially in patients with SLE and ILD, leads to significant reductions in survival. Advanced therapy increases cost without proportional survival benefit, highlighting the need for earlier intervention and risk-based treatment strategies.

| Therapy | Age group | No. | Male (%) | No. of Death (%) | Age at Dx. years | LE in years | Loss-of-LE in years | Lifetime Costs in USD | Cost per life year in USD |
|----------------------|-----------|------|------------|------------------|------------------|--------------|---------------------|-----------------------|---------------------------|
| Advanced PAH therapy | | 1255 | 285(22.71) | 455(36.25) | 51.48(16.79) | 10.44 (0.66) | 23.74 (0.80) | 612,634(39,504) | 59,425 |
| | 20-49 | 618 | 138(22.33) | 203(32.85) | 37.1(7.92) | 13.57 (2.11) | 33.42 (2.13) | 828,690(102,198) | 63,133 |
| | 50-99 | 637 | 147(23.08) | 252(39.56) | 65.43(9.94) | 8.71 (1.04) | 13.04 (1.13) | 452,841(50,660) | 52,562 |
| Sildenafil alone | | 2140 | 586(27.38) | 835(39.02) | 60.2(17.12) | 11.69 (1.71) | 14.98 (1.68) | 102,630(9,218) | 9,989 |
| | 20-49 | 630 | 152(24.13) | 162(25.71) | 38.88(7.48) | 15.94 (4.57) | 29.23 (4.62) | 137,541(21,285) | 9,679 |
| | 50-99 | 1510 | 434(28.74) | 673(44.57) | 69.09(11.1) | 6.70 (0.73) | 12.23 (0.74) | 71,510(6,024) | 11,046 |

海報摘要 TCR16

Association of Serum Complement C3 Levels with Disease Severity in Patients with Connective Tissue Disease-Associated Interstitial Lung Disease

Yen-Lun Tai¹, Jia-Feng Chen^{1*}, Chung-Yuan Hsu¹, Wen-Chan Chiu¹, Yu-Jih Su¹, Shan-Fu Yu¹, Han-Ming Lai¹, Ying-Chou Chen¹, Tien-Tsai Cheng¹

¹Division of Rheumatology, Allergy, and Immunology, Department of Internal Medicine, College of Medicine, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University, Kaohsiung, 833, Taiwan

*Corresponding author

血清補體 C3 濃度與結締組織疾病相關間質性肺病嚴重程度之相關性

戴諺綸, 陳嘉峯, 許鐘元, 邱文燦, 蘇昱日, 尤珊富, 賴漢明, 陳英州, 鄭添財

高雄長庚紀念醫院內科部風濕過敏免疫科

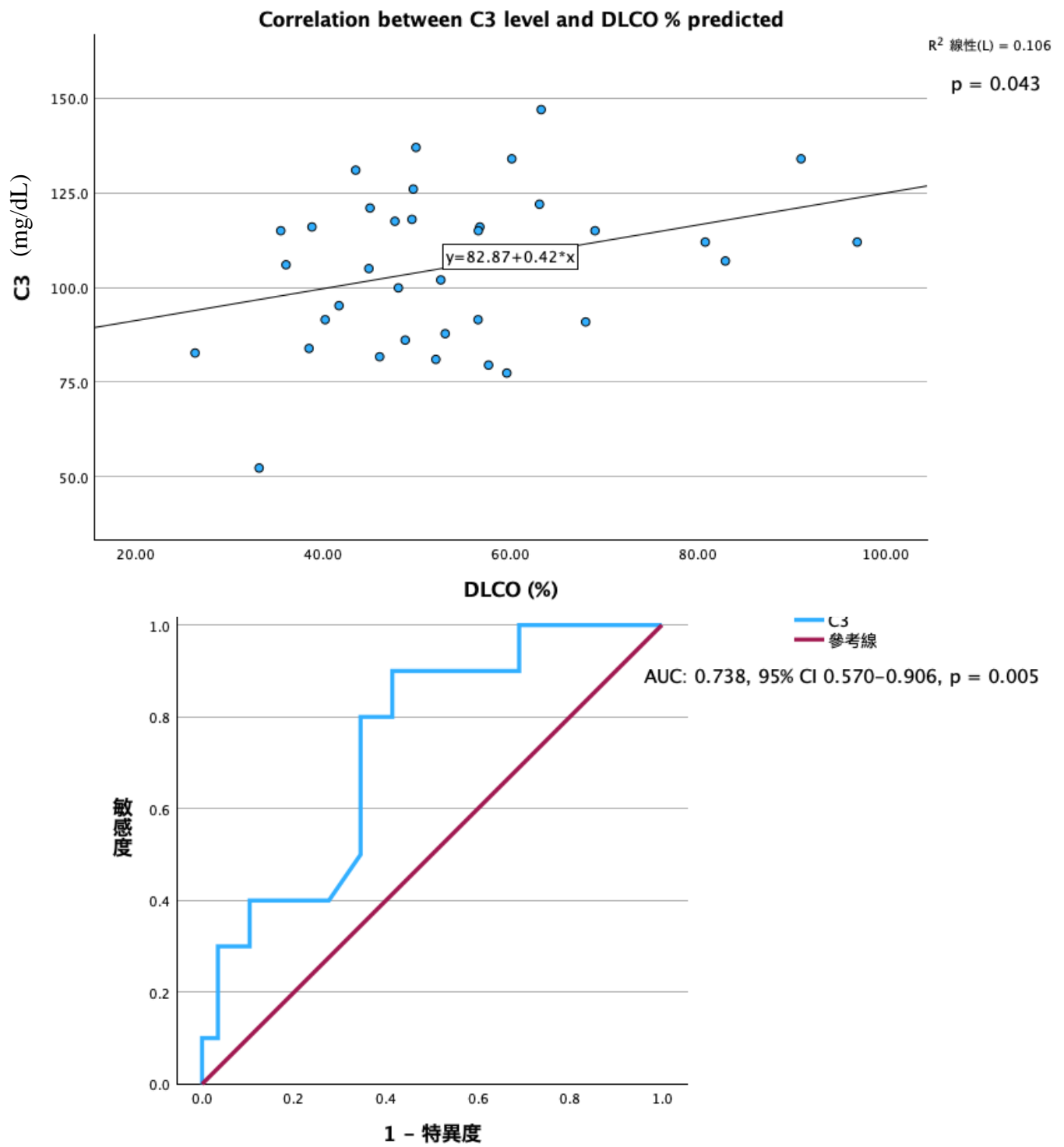
Background: Reliable biomarkers for assessing disease severity in connective tissue disease-associated interstitial lung disease (CTD-ILD) remain not well established. This study aimed to identify potential severity biomarkers by correlating them with diffusing capacity of the lung for carbon monoxide (DL_{CO}), a key clinical measure of lung function.

Methods: We conducted a retrospective chart review of patients with CTD-ILD at Kaohsiung Chang Gung Memorial Hospital, Taiwan, from 2016 to 2025. Patients were included if their diagnosis was confirmed by high-resolution computed tomography (HRCT) or through multidisciplinary discussion. We collected clinical data, laboratory values, image results and pulmonary function test results. Biomarker associations were evaluated using logistic regression, and their optimal cut-off values were established with receiver operating characteristic (ROC) curve analysis.

Results: Among 69 patients reviewed, 64 met inclusion criteria. 48 patients were eligible for severity analysis based on DL_{CO}, stratified into normal/mild (n=14) and moderate/severe (n=34) groups. Lower serum complement C3 levels were significantly associated with greater disease severity. C3 levels were significantly different between the severity groups (p=0.016) and showed a significant positive correlation with DL_{CO} % predicted (p=0.043; Figure 1). Logistic regression confirmed that lower C3 was a significant predictor of moderate/severe disease (Odds Ratio: 0.95, 95% CI 0.90-0.99, p=0.027). Furthermore, ROC analysis demonstrated that C3 has good predictive value for severity, with an AUC of 0.738 (p=0.005; Figure 2).

Conclusion: Serum complement C3 is a promising biomarker for assessing severity in CTD-ILD. To translate this into clinical practice, further studies are necessary to validate its prognostic value.

Figure 1. Correlation between C3 level and DLCO % predicted



海報摘要 TCR17

Change in high-resolution computed tomography screening strategy and its impact on radiographic patterns in systemic sclerosis interstitial lung disease: a single-center study

Tai-Ju Lee¹, Shao-Yu Pai², Shih-Hsin Chang³, Tsai-Hung Yen⁴, Ting-Yuan Lan², Song-Chou Hsieh², Chung-Liang Lan³, Ko-Jen Li²

1 National Taiwan University Hospital Hsinchu Branch, Taiwan

2 National Taiwan University Hospital, Taiwan

3 China Medical University Hospital, Taiwan

4 Taichung Veterans General Hospital, Taiwan

全身性硬化症病患肺部電腦斷層篩檢策略對於間質性肺炎與影像學分類之影響：單一中心研究

李岱儒¹, 白紹玉², 張詩欣³, 顏在弘⁴, 藍鼎淵², 謝松洲², 藍忠亮³, 李克仁²

1 國立臺灣大學醫學院附設醫院新竹臺大分院.

2 國立臺灣大學醫學院附設醫院.

3 中國醫藥大學醫學院附設醫院.

4 臺中榮民總醫院.

Background:

Interstitial lung disease (ILD) is a prevalent major organ complication in patients with systemic sclerosis (SSc). Current society guidelines recommend screening for ILD with high-resolution computed tomography (HRCT) at the time of SSc diagnosis. However, the impact of early screening strategy on the ILD classification and outcomes remained unknown.

Materials and methods:

In this retrospective, multi-center study, SSc patients who underwent either screening or diagnostic HRCT were identified. The disease onset, demographics, disease subtypes, serology, and HRCT results were recorded. The disease onset was defined as the first non-Raynaud phenomenon symptom, or SSc diagnosis if the onset was not identifiable. The duration between disease onset and the first HRCT, and its association with patient characteristics, HRCT results, and ILD patterns were analyzed.

Results:

From 2005 to 2025, 118 patients who underwent at least one HRCT for ILD screening or diagnosis were included. 78% patients were female and the median age at HRCT was 60. Limited cutaneous SSc (53%) were more than diffuse cutaneous SSc (29%), and VEDOSS (9.3%). The most frequent radiographic pattern was non-specific interstitial pneumonia (27%), followed by definite usual interstitial pneumonia (UIP) (12%) and probable UIP (10%). The durations between disease onset and first HRCT significantly decreased in the past 20 years (**Figure 1**). The delay of HRCT was associated with fibrotic ILD (**Figure 2A**) and definite UIP pattern (**Figure 2B**).

Conclusion:

In this study, we demonstrated a significant change in HRCT screening pattern in the past 20 years and its impact on ILD subtypes.

Figure 1: Time from disease onset to first HRCT by year of diagnosis

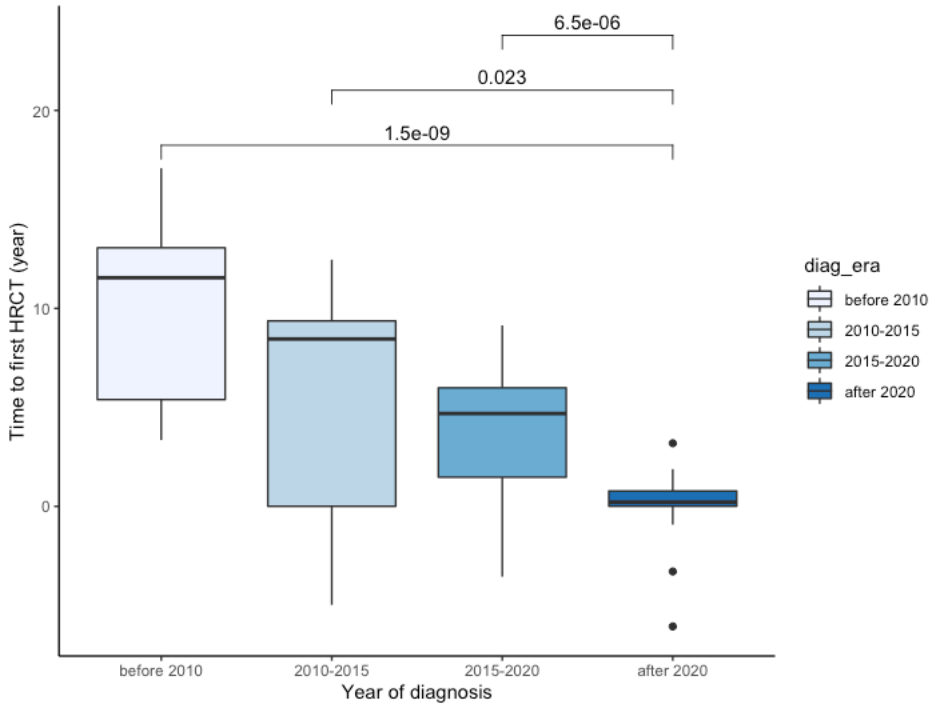
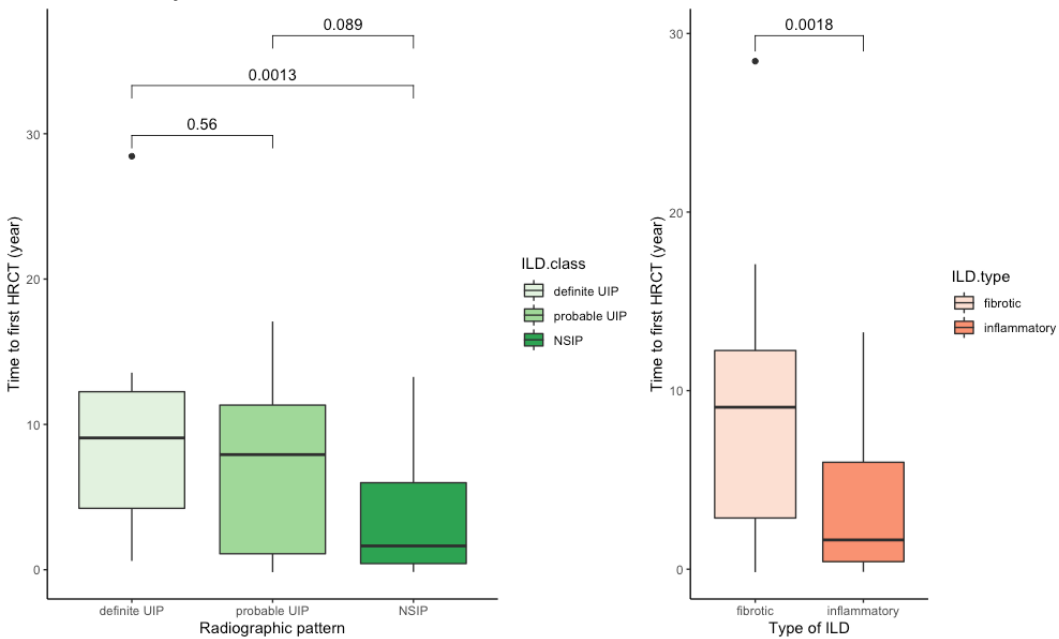


Figure 2: Association between time to first HRCT and (A) major ILD patterns and (B) fibrotic versus inflammatory ILD



海報摘要 TCR18

Safety and effectiveness of belimumab in high-risk inflammatory interstitial lung diseases

Kuan-Yen Lin, Ting-Yuan Lan, Ting-Wei Chang, Shao-Yu Pai, Song-Chou Hsieh, Tai-Ju Lee

Belimumab 在高風險發炎性間質性肺病中的安全性及療效

林冠言, 藍鼎淵, 張庭暉, 白紹玉, 謝松洲, 李岱儒

國立臺灣大學醫學院附設醫院新竹臺大分院

Background: Interstitial lung disease (ILD) is a severe and potentially life-threatening complications in patients with or without connective tissue diseases (CTD.), particularly in elderly patients with multiple comorbidities, or respiratory failure. Current treatments often have significant side effects in these severe and frail individuals. In this study, we analyzed the pulmonary outcomes and safety of belimumab in inflammatory ILDs.

Methods: This retrospective study included inflammatory ILD patients receiving belimumab at two university hospitals. We recorded baseline demographics, respiratory support, and concomitant medications. The primary endpoint was the change in glucocorticoid dose at Day 60. Other outcomes included respiratory improvement and adverse events.

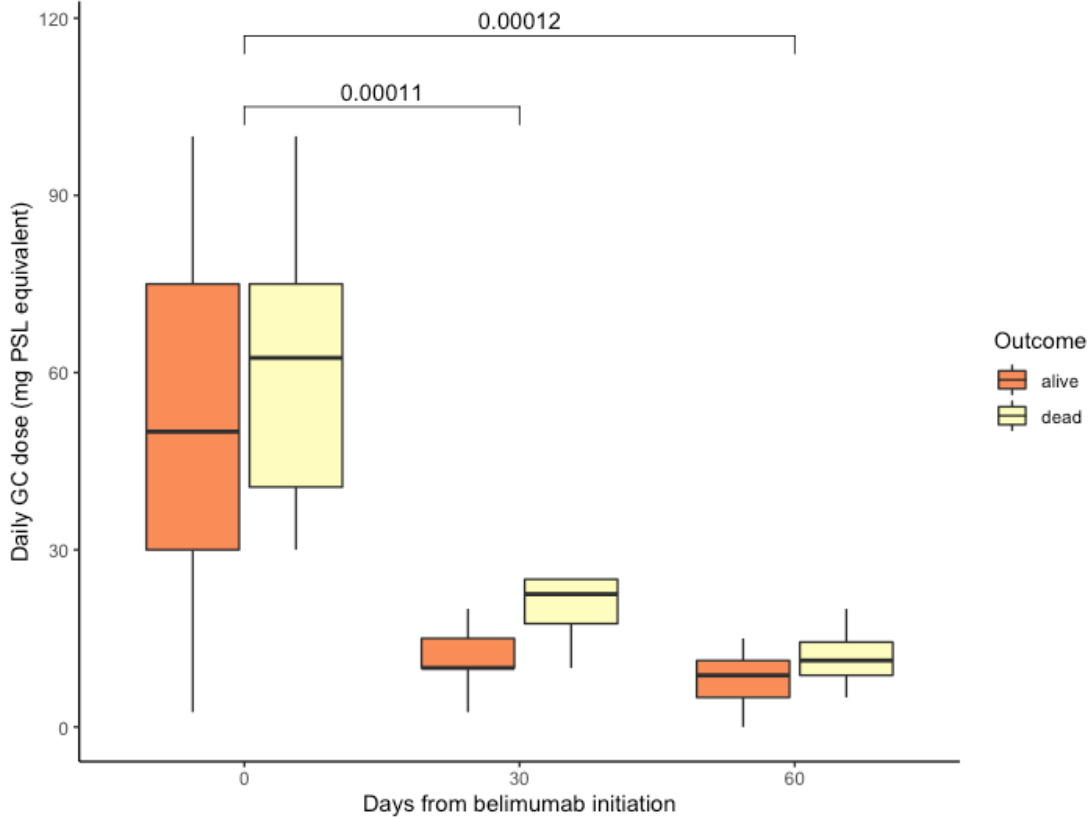
Results: From 2023 to 2025, 15 patients were collected, including 8 idiopathic ILD (5 OP and 3 NSIP) and 7 CTD ILD (4 idiopathic inflammatory myopathy-ILD and 3 ANCA-associated ILD). The median age was 80 years, with most having multiple comorbidities (Table 1). At baseline, 11 (73.3%) patients had respiratory failure and 10 (66.7%) required advanced oxygen supports. At day 60, 13 (86.7%) patients were alive, and all were free from oxygen support. Glucocorticoid was significantly decreased (figure 1). In a median follow up of 25 weeks, 2 patients died from infection, and 2 from cardiovascular causes. None of the patients experienced recurrence of ILD.

Conclusion: Our findings suggested that belimumab might be a promising option for patients with inflammatory ILD with respiratory failure, allowing rapid glucocorticoid tapering and good safety profile. The study provided real-world data supporting the potential role of belimumab in high-risk ILD, warranting further investigations.

Table 1

| Characteristic | Overall, N = 15 | ANCA, N = 3 | IIM, N = 4 | idiopathic, N = 8 |
|-------------------------------|-----------------|-------------|-------------|-------------------|
| Age | 80 (74, 83) | 82 (76, 83) | 78 (75, 81) | 81 (76, 85) |
| Female sex | 7 (47%) | 1 (33%) | 3 (75%) | 3 (38%) |
| HRCT pattern | | | | |
| NSIP | 4 (27%) | 0 (0%) | 1 (25%) | 3 (38%) |
| OP | 9 (60%) | 2 (67%) | 2 (50%) | 5 (62%) |
| UIP | 2 (13%) | 1 (33%) | 1 (25%) | 0 (0%) |
| Initial oxygen therapy | | | | |
| ETT+MV | 6 (40%) | 1 (33%) | 2 (50%) | 3 (38%) |
| HFNC | 4 (27%) | 1 (33%) | 0 (0%) | 3 (38%) |
| mask | 1 (6.7%) | 0 (0%) | 0 (0%) | 1 (12%) |
| free | 4 (27%) | 1 (33%) | 2 (50%) | 1 (12%) |
| Initial GC dose | 50 (34, 75) | 30 (28, 52) | 58 (38, 81) | 62 (47, 81) |
| Comorbidity | | | | |
| DM | 7 (47%) | 2 (67%) | 2 (50%) | 3 (38%) |
| HTN | 1 (6.7%) | 1 (33%) | 0 (0%) | 0 (0%) |
| Any lung disease | 4 (27%) | 0 (0%) | 3 (75%) | 1 (12%) |
| Any heart disease | 11 (73%) | 1 (33%) | 2 (50%) | 7 (88%) |
| CHF | 7 (47%) | 1 (33%) | 2 (50%) | 4 (50%) |
| CKD | 3 (20%) | 1 (33%) | 1 (25%) | 1 (12%) |
| CVA | 2 (13%) | 0 (0%) | 1 (25%) | 1 (12%) |

Figure 1



海報摘要 TCR19

The long-noncoding RNA, LOC100506014, regulates the inflammatory responses via association with G protein-coupled receptor kinase 3 in T cells of ankylosing spondylitis patients

Hui-Ting Chen¹, Hui-Chun Yu², Hsien-Bin Huang³, Ning-Sheng Lai^{4,5}, Ming-Chi Lu^{2,4,5}

¹Division of Rehabilitation Medicine, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Dalin, Chiayi, Taiwan

²Department of Medical Research, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation

³Department of Biomedical Sciences, National Chung Cheng University

⁴Division of Allergy, Immunology and Rheumatology, Department of Medicine, Dalin Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation

⁵School of Medicine, Tzu Chi University

長鏈非編碼核糖核酸 LOC100506014 藉由僵直性脊椎炎患者 T 細胞中的 G 蛋白偶聯受體激酶 3 結合來調節發炎反應

陳惠婷¹，游惠君²，黃憲斌³，賴寧生^{4,5}，呂明錡^{2,4,5}

¹佛教慈濟醫療財團法人大林慈濟醫院復健科

²佛教慈濟醫療財團法人大林慈濟醫院醫學研究部

³國立中正大學生物醫學科學系

⁴佛教慈濟醫療財團法人大林慈濟醫院過敏免疫風濕科

⁵慈濟大學醫學系

Background: Ankylosing spondylitis (AS) is a chronic inflammatory disease. The levels of long-noncoding RNA, LOC100506014, are down-regulated in T cells of ankylosing spondylitis (AS) patients. However, the role of LOC100506014 in contribution to AS pathogenesis remained characterized.

Methods: Jurkat cells were overexpressed with LOC100506014. The effect of overexpressed LOC100506014 on the expression of proinflammation cytokines in Jurkat cells was analyzed by qRT-PCR. The proteins binding to LOC100506014 in Jurkat cells were analyzed by RNA pull-down assay, proteomics and western blotting. The effect of overexpressed LOC100506014 on the activation of ERK signaling was examined by western blotting.

Results: Overexpression of LOC100506014 suppresses the expression of IL-2 and interferon-g as well as promotes the expression of IL-1, but no effect on the expression of IL-10, IL17 and TNF-a. In addition, overexpression of LOC100506014 down-regulates the ERK signaling. RNA pull-down assay plus proteomics demonstrated that LOC100506014 binds to G protein-coupled receptor kinase 3 (GRK3). This interaction was also confirmed by LOC100506014 pull-down assay plus western blotting.

Conclusions: GRK3 is a negative regulator of CXCL12/CXCR4, in turn leading to attenuating inflammatory responses. LOC100506014 may associate with GRK-3 and in turn block the regulation of CXCL12/CXCR4 signaling by GRK-3, resulting in attenuation of ERK signaling. Down-regulation of LOC100506014 in T cells of AS patients promotes inflammatory responses.