POS1222

FACTORS ASSOCIATED WITH USE OF TELEMEDICINE FOR FOLLOW-UP OF LUPUS NEPHRITIS IN THE COVID-19 OUTBREAK

H. So¹, E. Chow¹, T. K. Li¹, I. T. Cheng¹, S. L. Lau¹, C. C. Szeto¹, L. S. Tam¹.¹The Chinese University of Hong Kong, Medicine and Therapeutics, Hong Kong, Hong Kong (SAR)

Background: It is important to weigh the potential risk of exposure to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) during a doctor visits against the risk of missing disease controls in patients with lupus nephritis during the COVID-19. Telemedicine (TM) follow-up is a reasonable option. Despite the recent exponential increase in application worldwide, there is no study examining the clinical factors associated with the patients' choice of TM use in lupus nephritis.

Objectives: In this study, we aimed to examine the clinical variables associated with a higher preference for TM follow-up in patients with lupus nephritis.

Methods: Consecutive patients followed at the lupus nephritis clinic were contacted for their preferred mode of follow-up. The demographic, socioeconomic and clinical data of the first 140 patients opted for TM and 140 patients preferred to continue standard in-person follow-up were collected and compared.

Results: The mean age of the 280 recruited patients was 45.6 ± 11.8 years. The mean disease duration was 15.0 ± 9.2 years. The majority of them had lupus nephritis class III, IV or V (88.2%) and were on prednisolone (90%). Three quarters of the patients (67.1%) were on immunosuppressants. The mean SLEDAI-2k was 4.06 ± 2.54 , physician global assessment (PGA) 0.46 ± 0.62 and SLICC/ACR damage index 1.11 ± 1.36 . A significant proportion of the patients (72.1%) had one or more comorbidities. It was found that patients with higher PGA and family monthly income (> USD3,800) preferred TM, while fulltime employees preferred in-person follow-up (Table 1). These predictors remained significant after controlling for age in the multivariate analysis with odd ratios for PGA 1.05 (95% CI 1.01-1.09), family income >USD3,800 1.90 (95% CI 1.24-3.79) and fulltime employment 0.53 (95% CI 0.32-0.88). PGA was noted to be positively correlated with the perceptions that TM reduces ($r=0.13$, $p=0.036$) and routine visit increases ($r=0.12$, $p=0.04$) the risk of COVID-19 during the outbreak.

Conclusion: When choosing the mode of care delivery between TM and clinic visit, the patient's disease activity as well as employment and economic status appeared to be important.

Table 1. Demographic, socio-economic and disease data of the recruited lupus nephritis patients with comparison between the telemedicine/standard follow-up groups

	Overall (n=280)	Telemedicine group (n=140)	Standard follow-up group (n=140)	P-value
Age in years	45.6±11.8	44.6±11.4	46.6±12.1	0.159
Gender: Female	256 (91.4)	127 (90.7)	129 (92.1)	0.669
Ever presence of rash	170 (60.8)	87 (62.1)	82 (58.6)	0.527
Ever presence of joint pain	174 (62.1)	92 (65.7)	82 (58.6)	0.247
Disease duration in months	15.8±9.5	15.0±9.3	16.5±9.6	0.176
24 hour urine proteinuria in gram	0.45±0.60	0.50±0.63	0.40±0.57	0.176
Daily prednisolone dose in mg	8.82±6.1	5.28±4.46	6.35±7.37	0.143
Use of immunosuppressant	188 (67.1)	96 (68.6)	92 (65.7)	0.611
SLEDAI-2K	3.39±2.35	3.51±2.28	3.26±2.41	0.366
PGA	0.46±0.62	0.54±0.63	0.38±0.59	0.025
LLDAS	196 (70)	92 (66)	104 (74.3)	0.160
Presence of comorbidity	202 (72.1)	100 (71.4)	102 (72.9)	0.790
SDI	0.97±1.23	0.95±1.21	1.00±1.26	0.732
HAQ-DI	0.20±0.40	0.23±0.45	0.18±0.34	0.300
HADS: Anxiety scale	5.93±3.98	5.86±4.06	6.00±3.91	0.776
Depression scale	5.57±3.91	5.56±4.25	5.59±3.54	0.954
Education level: tertiary or above	122 (43.6)	63 (45.0)	59 (42.1)	0.746
Fulltime employment	127 (45.4)	56 (40.0)	71 (50.7)	0.041
Occupation: professionals	36 (12.9)	22 (15.7)	14 (10.0)	0.181
Monthly family income > USD3,800	84 (30.0)	51 (36.4)	33 (23.6)	0.028

Data are reported as mean ± SD or number (%). HAQ-DI: Health Assessment Questionnaire Disability Index; HADS: Hospital Anxiety and Depression Scale; PGA: physician global assessment; LLDAS: lupus low disease activity state and SDI: Systemic Lupus International Collaborating Clinics/American College of Rheumatology (SLICC/ACR) Damage Index.

Disclosure of Interests: Ho SO: None declared, Evelyn Chow: None declared, Tena K. Li: None declared, Isaac T. Cheng: None declared, Sze-Lok Lau: None declared, Cheuk-Chun Szeto: None declared, Lai-Shan Tam Grant/research support from: Grants from Novartis and Pfizer

DOI: 10.1136/annrheumdis-2021-eular.2751

POS1223

RAS GUANYL RELEASING PROTEIN 1 (RASGRP1) IN PERIPHERAL B CELLS LINKS RA TO COVID-19

S. Hannawi¹, F. Alqutami², M. Y. Hachim². ¹Ministry of Health and Prevention MOHAP, Rheumatology, Dubai, United Arab Emirates; ²Mohammed Bin Rashid University of Medicine and Health Sciences, Basic Sciences, Dubai, United Arab Emirates

Background: Changes in the B cell subpopulations is a hallmark of the antiviral response against SARS-CoV-2 and is associated with COVID-19 severity (1). Recently our group showed common derangement observed in rheumatoid arthritis (RA) and COVID-19 (2). In RA, synovium attracts potentially autoreactive—B cells and plasma cells that play a central role in RA pathogenesis (3). We were interested to know the similarity in B cell's transcriptomic changes specific to RA and COVID-19.

Objectives: Identify similar upregulated genes in synovium and B cells in RA and at the same time are differentially expressed in B cells infected with SARS-CoV-2 or from COVID-19 patients.

Methods: RNAseq dataset (GSE89408) of (218) samples isolated from joint synovial biopsies from subjects with and without rheumatoid arthritis were retrieved from GEO online database. Differentially expressed genes (DEGs) specific to RA were identified after exclusion of those upregulated in Osteoarthritis or other joint condition samples in the same dataset. The RA specific genes were intersected with DEGs between B cells from healthy versus RA as extracted from (GSE110999) dataset. The shortlisted genes specifically upregulated in B cells of RA were identified and were explored in B cells COVID-19 transcriptome datasets using (<https://metascape.org/COVID>).

Results: 60 genes were found to be specifically upregulated in RA synovium and B cells and are changed in B cells infected with SARS-CoV-2 or from COVID-19 patients, Figure (1-A). Those genes were involved in interferon signaling, antiviral and immune cell activation. RASGRP1 was common between B cells of RA and COVID-19 and might play a role in the pathogenesis of both, Figure (1-B). RASGRP1 controls ERK/MAPK kinase cascade needed in B-/T-cell differentiation and development. It is vital to protect against viral infection and the autoimmune associated proliferation of activated T-cells like RA (4). We checked its level in another dataset (GSE152641) of the whole blood RNASeq of 62 COVID-19 patients and 24 healthy controls. RASGRP1 was significantly down in COVID-19 compared to healthy control, Figure (1-C).

Conclusion: SARS-CoV-2 impair B and T's cells' immune response through its action on RASGRP1 and that can be a novel mechanistic explanation of how the virus decreases immune cells and impair the B cell's humoral immunity.

REFERENCES:

- [1] Sosa-Hernández VA, Torres-Ruiz J, Cervantes-Díaz R, Romero-Ramírez S, Páez-Franco JC, Meza-Sánchez DE, et al. B Cell Subsets as Severity-Associated Signatures in COVID-19 Patients. *Frontiers in Immunology*. 2020;11(3244).
- [2] Hachim MY, Hachim IY, Naeem KB, Hannawi H, Al Salmi I, Hannawi S. C-C chemokine receptor type 5 links COVID-19, rheumatoid arthritis, and Hydroxychloroquine: in silico analysis. *Translational Medicine Communications*. 2020;5(1):14.
- [3] Doorenspleet ME, Klarenbeek PL, de Hair MJ, van Schaik BD, Esveldt RE, van Kampen AH, et al. Rheumatoid arthritis synovial tissue harbours dominant B-cell and plasma-cell clones associated with autoreactivity. *Ann Rheum Dis*. 2014;73(4):756-62.
- [4] Molineros JE, Singh B, Terao C, Okada Y, Kaplan J, McDaniel B, et al. Mechanistic Characterization of RASGRP1 Variants Identifies an hnRNP-K-Regulated Transcriptional Enhancer Contributing to SLE Susceptibility. *Frontiers in Immunology*. 2019;10(1066).

The B cells markers upregulated in B cells infected with SARS-CoV-2 and are specifically DEGs in B cells and Venn diagram showing shared DEGs in synovium and B cells in RA generated by <http://www.interactiennn.net> the RA and COVID-19 DEGs genes as generated by (<https://metascape.org/COVID>). (C) Normalized gene expression in whole blood of 62 COVID-19 patients and 24 healthy controls

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.2809