In addition, the performance of the newly proposed criteria was evaluated including patients with more than 10 points, but negative ANA. This led to an increase of sensitivity to 90% (95% CI 86-94%), but also did not influence specificity.

Table 1. Performance of the proposed 2017 ACR-EULAR classification criteria for SLE

<table>
<thead>
<tr>
<th>Proposed 2017 ACR-EULAR classification criteria in SLE patients with NP symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>With adjusted NP domain</td>
</tr>
<tr>
<td>Sensitivity (95% CI)</td>
</tr>
<tr>
<td>Specificity (95% CI)</td>
</tr>
</tbody>
</table>

Table 1. Performance of the proposed 2017 ACR-EULAR classification criteria for SLE

Conclusion: In a cohort of SLE patients with NP symptoms, the proposed 2017 ACR-EULAR classification criteria showed similar sensitivity as the 1997 ACR and the SLICC 2012 criteria, but lower specificity. Including ANA negative patients improved sensitivity.

REFERENCES:

Disclosure of Interests: Rory Monahan: None declared, H.J.L. Beart: None declared, Maika Gegevena: None declared, E.G. Brilman: None declared, L.J.J. Beart- van de Voorde: None declared, César Magro Checa: None declared, Thomas Huizinga Consultant for: Merck, UCB, Bristol Myers Squibb, Biostat AG, Pﬁzer, GSK, Novartis, Roche, Sanofi-Aventis, AbbVie, Crescendo Bioscience Inc., Nycoderm, Boeringher, Takeda, Zydis, Epirus, Eli Lilly, G.M. Steup-Beekman: None declared


THU0246

ASYMPTOMATIC MYOCARDIAL DYSFUNCTION DETECTED BY SPECKLED TRACKING ECHOCARDIOGRAPHY (STE) IN ACTIVE SLE PATIENTS

Dhiren Raval1, Muzaffar Bindroo2, Gayatri Ekbote3, Natasha Negalur1, Lucky Sharma1, Naval Mandirattra1, Shrutti Badaj1, Vinay Singal1, Vinayak Agarwala1, Rajiva Gupta1, Medanta - The Medicity, Rheumatology and clinical immunology, Gurgaon, India; Medanta The Medicity, Rheumatology and clinical immunology, Gurgaon, India; Medanta The Medicity, Rheumatology and clinical immunology, Gurgaon, India

Background: Clinical myocarditis is seen in 10% of SLE patients, but autopsy studies have shown myocardial involvement in up to 50% of patients. Lupus myocarditis may be silent and can be detected by newer echocardiographic technique like STE especially when SLE is active.1

Objectives: To study asymptomatic myocardial dysfunction by STE in active SLE patients.

Methods: All consecutive active SLE patients having a SLEDAI score ≥ 6 without any cardiac symptoms with disease duration ≤ 5 years aging between 18-45 years, who attended the Rheumatology and Clinical Immunology department (Outpatient and Inpatient) of Medanta, The Medicity, Gurgaon, from May 2016 to March 2018, were enrolled. They were evaluated for myocardial dysfunction by using a novel ultrasound technique - STE, which was reviewed by one observer cardiologist. Global longitudinal systolic strain (GLSS) was calculated by STE in all patients. GLSS<19.7 was considered as an indicator of myocardial dysfunction.2,3

Age and sex matched controls in the form of thirty healthy volunteer controls in the same age and sex group patients

Results: Fifty eight active lupus patients were analysed. In the cohort female: male ratio was 8.6:1, median duration of disease was 22 months (0.5 – 120) and mean SLEDAI was 11.02 ± 2.30. GLSS was significantly low in active lupus patients compared to healthy controls (p=0.0001) suggestive of myocardial dysfunction. In active lupus patients, abnormal echocardiographic findings (myocarditis, non-bacterial thromboendocarditis, pulmonary arterial hypertension and pericarditis) were seen in 62.1%. Myocardial dysfunction was found in 27 (46.6%), 20 (34.5%) patients had low GLSS with normal left ventricular ejection fraction (LVEF) and these were significantly associated with APLA and anti Sm/RNP antibodies. Multivariate Logistic Regression analysis of myocardial dysfunction with SLEDAI and other system parameters showed that musculoskeletal, CNS, haematological and nephritis were associated with increased risk for developing higher disease activity and myocardial dysfunction, although it was not statistically significant.

Table 1. Comparison of GLSS and LVEF between active SLE patients and healthy control group patients

<table>
<thead>
<tr>
<th>Table No.1 Comparison of GLSS and LVEF between active SLE patients and healthy control group patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echocardiographic parameters</td>
</tr>
<tr>
<td>Mean LVEF, (Mean ± SD)</td>
</tr>
<tr>
<td>Mean GLSS, (Mean ± SD)</td>
</tr>
<tr>
<td>PAH (&gt;30mmHg), n (%)</td>
</tr>
<tr>
<td>NBT, n (%)</td>
</tr>
<tr>
<td>Pericarditis, n (%)</td>
</tr>
</tbody>
</table>

Table 2. Myocardial dysfunction in active SLE based GLSS <19.7 %

| Parameters | No. of patients (n=58) | % |
|--------------------------------------------------|
| GLSS <19.7 | 27 | 46.6 |
| < LVEF 50% | 7 | 12.1 |
| Both low | 7 | 12.1 |
| GLSS < -19.7 with normal LVEF | 20 | 34.5 |

Table 2. Myocardial dysfunction in active SLE based GLSS <19.7 %

Conclusion: Almost half of active lupus patients have silent myocarditis. GLSS is more sensitive in detecting asymptomatic myocardial dysfunction than LVEF. Regular Echocardiography with Speckled tracking should be performed in Lupus patients especially when disease is active.

REFERENCES:

Disclosure of Interests: None declared


THU0247

LRNA4: A NOVEL PROGNOSTIC BIOMARKER OF RENAL OUTCOME IN LUPUS NEPHRITIS PATIENTS

Heng Can, Jin Lin. The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, China

Background: Lupus nephritis (LN) is the most common organ-threatening manifestation of systemic lupus erythematosus (SLE) and can result in kidney deterioration and end-stage renal disease (ESRD). Newly discovered biomarkers exhibit qualities of disease activity and damage, predict long term preservation of renal function.

Objectives: To study the transcriptomics profile of kidney in LN patients to explore the novel non-invasive predictive biomarker for renal outcome.

Methods: The transcriptomics profile of kidney in 24 LN patients was obtained by using Affymetrix human HTA 2.0 gene expression chip. Random Forest method was used to screen the candidate mRNA biomarkers by correlate the gene expression profile with eGFR slope during the follow-up (Mean time 5.2±1.2 years). In addition, in an independent LN cohort enrolled 45 patients, qRT-PCR and immunochemistry staining was performed to validate the correlation of mRNA level and protein level of candidate gene with renal outcome.

Disclosure of Interests: None declared

Results: (1) There were 3212 gene was regulated in LN kidney (Fold change>1.5, FDR<0.05, compared with healthy control. DCBLD2, NPTN, CPVL, LRRN4, DCBLD2 and NPTN were found to have the leading correlation with eGFR slope of LN patients by using random forest method. (2) In the independent cohort, we validate that the mRNA and protein level of DCBLD2, NPTN, CPVL, Nptn, Lrrn4 was significantly evaluated in tubulointerstitial component in LN kidney, compared with healthy controls (p<0.05), and also significantly correlated with eGFR slope [LRRN4(r=-0.715, P<0.0001, DCBLD2(r=-0.620, P<0.0001, CPVL(r=-0.517, P=0.004, RGS5(r=-0.485, P=0.014, NPTN(r=-0.412, P=0.016). In addition, the mRNA level of LRRN4 and DCBLD2 in kidney was correlated with SLEDAI score(r=0.611and r=0.512, respectively, P<0.001 and serum C3 level (r=0.501, r=0.435, P<0.05). LRRN4 mRNA level also significantly associated with tubulointerstitial fibrosis scorings[r=-0.432, P=0.05](3 he protein of LRRN4 was expressed both in glomeruli and tubulointerstitial tissue. And H&E level of LRRN4 protein was significantly associated with eGFR slope (r=0.534, P<0.05 in LN patients.

Conclusion: LRRN4 in kidney may be used as a novel predictive biomarker of renal outcome in LN patients.

REFERENCES:


Disclosure of Interests: None declared


THU0248

UTILITY OF A MOBILE PHONE BASED APPLICATION TO COLLECT PATIENT REPORTED OUTCOME INFORMATION FROM SUBJECTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

Brooke Williams1, Bridget Muckian2, Christine Peschken3, Richard Furie4, Elena Massarotti5, Vanja Sikirica6, Steven Gilbert6, Martin Hodg6, Manitoba, Winnipeg, Canada; 1AMPEL BioSolutions, Charlottesville, VA, United States of America; 2Northwell Health, Great Neck, NY, United States of America; 3Brigham and Women’s Hospital, Boston, MA, United States of America; 4Pfizer, Boston, MA, United States of America

Background: Patient Reported Outcomes (PROs) can provide important data about the impact of a disease on an individual subject and/or the quality of the response to medication. However, in most circumstances, PRO information is collected only intermittently and usually at the point of care or treatment. The development of mobile technology to collect PRO data provided the opportunity to acquire this information more frequently, in real time, and in the subject’s normal environment.

Objectives: To test the utility of a smart phone application (app) to collect PRO information in subjects with systemic lupus erythematosus (SLE).

Methods: A smart phone app was developed that collects data from a number of PRO instruments, including FACIT-F(fatigue), SF-36 (health-related quality of life) and patient global assessment (PtGA). Subjects with SLE were involved in the initial development and evaluation of the acceptability of the app. To test the utility of this app, a multi-center clinical study (VALUE, NCT03142711) was carried out in collaboration with subjects in SLE, in which PRO information was collected with the app daily (FACIT-F and SF-36) and PtGA (26.6) and 67.4(25.8) for the 3 time points, respectively. The ICCs were 0.94(0.91-0.97) and 0.95(0.93-0.97) at the three time points, respectively. For the FACIT-F instrument, the mean (SD) score with the app was 33.2 (11.7), 31.0(12.6) and 32.3(12.7) and with the paper form was 34.1(11.6), 32.0(12.2) and 32.0(12.5) at the 3 time points with ICCs of 0.94(0.91-0.96), 0.96(0.95-0.98) and 0.96(0.94-0.97), respectively. For the SF-36 Physical Functioning score, the mean (SD) with the app was 66.3(26.1), 65.5(26.9) and 67.4(25.8) and with the paper form was 68.4(25.1), 66.1(26.6) and 67.6(25.8) for the 3 time points, respectively. The ICCs were 0.96(0.94-0.97), 0.84(0.91-0.96) and 0.96 (0.94-0.97) for the 3 time points, respectively.

Conclusion: Compliance with completion of PRO instruments using a mobile app was excellent and the content collected with the app formed with that collected using a standard paper form. Since patient compliance with the use of a mobile app to collect PRO information and the consistency of the information obtained compared to that obtained in standard fashion using paper form were high, the app affords the potential opportunity to acquire frequent and highly reliable information about the impact of disease and response to medication in individual subjects with SLE.

Acknowledgement: The study was sponsored by the Lupus Research Alliance and funded by Pfizer. Development and support of the app was provided by TCS.

Disclosure of Interests: Brooke Williams: None declared, Bridget Muckian: None declared, Christine Peschken Consultant for: AstraZeneca, Richard Furie Grant/research support from: Biogen, UCB Pharma, but not in the last 12 months, Consultant for: Biogen, UCB Pharma, but not in the last 12 months, Elena Massarotti: None declared, vanja sikirica Shareholder of: Pfizer, Employee of: Pfizer, Steven Gilbert Shareholder of: Pfizer, Employee of: Pfizer, Martin Hodg Shareholder of: Pfizer, Employee of: Pfizer, Peter Lipsky Consultant for: Consulting fees from Horizon Pharma


THU0249

URINARY NEUTROPHIL GELATINASE ASSOCIATED LIPOCALCIN AND PROSTAGLANDIN D-SYNTHETASE PREDICT DISEASE FLARES IN SYSTEMIC LUPUS ERYTHEMATOSUS

Serena Faiano, Luciana Pierro, Alessia Borgia, Melania Alessia Coccia, Raniero Formica, Antonella Riccardi, Francesco Coccia, University of Campania "Luigi Vanvitelli", Rheumatology, Naples, Italy

Background: Systemic Lupus Erythematosus (SLE) is a multisystem autoimmune disease commonly characterized by periods of flares and quiescence. Conventional markers of disease activity (serum complement and anti-dsDNA antibodies) have a limited predictive value of disease flares. Recent evidence suggests that urine biomarkers are able to discriminate between SLE patients with ongoing renal activity and those without nephritis.

Objectives: To test if urinary Neutrophil Gelatinase Associated Lipocalin (NGAL) and Lipocalin-type Prostaglandin D-Synthetase (L-PGDS) are early biomarkers that could be used as flare predictors in SLE.

Methods: Patients prospectively followed at our clinic from March 2017 to September 2018, who fulfilled classification criteria for SLE (3), were considered for the study. Flares were identified by SELENA-SLEDAI Flare Index (SFI) after 3 months of urine collection (4). NGAL and L-PGDS levels were measured in the second voided urinary sample by ELISA. Data were compared by the unpaired student’s t test or the Mann–Whitney U test as appropriate. Logistic regression analysis was used to assess the independent baseline predictors of flares. Receiver operating characteristic (ROC) analysis was used to calculate the area under the curve (AUC) with associated 95% confidence interval (CI) to find the best cut-off values.

Results: Urine specimen was collected from 66 patients, including 64 females and 2 males with a median age at diagnosis of 27 years (IQR 21.5-38). During 3 months-follow-up, 18 (27%) out of the 66 patients experienced a single disease flare. Urinary levels of L-PGDS (Fig. 1) and NGAL (Fig. 2) significantly increased 12 weeks before a disease flare (p=0.0001 and p=0.002, respectively). Urinary NGAL levels correlated with anti-DNA antibody titre (r=0.254, p=0.042) and not with serum complement levels. Based on ROC analysis, urinary NGAL (AUC: 0.752) and L-PGDS (AUC: 0.811), outperformed conventional biomarkers (Table1). ROC analysis revealed that NGAL levels above 10.95ng/ml had a sensitivity of 84% and a specificity of 63% for flare prediction, while urine L-PGDS cut-off value in the ROC curve, 1500 ng/ml, predicted a flare with 78% sensitivity and 86% specificity. At multivariate analysis, NGAL and L-PGDS were independent predictors of flare with OR=10.34 (95% CI 1.46 – 73.03) and 24.85 (95% CI 4.32-