**The clinical values of KL-6, NLR**, **SII, MLR, PLR and RDW for predicting the occurrence and severity of connective tissue disease-associated interstitial lung disease**

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**Supplementary Tables**

Table S1. Comparison of the pulmonary function test between untreated and treated CTD-ILD patients.

|  |  |  |  |
| --- | --- | --- | --- |
| Parameters | Untreated group |  | Treated group |
| CRP |  | ESR |  | CRP |  | ESR |
| *r* | *p* |  | *r* | *p* |  | *r* | *p* |  | *r* | *p* |
| CTD-ILD |  |  |  |  |  |  |  |  |  |  |  |
| NLR | 0.675 | <0.001\* |  | 0.147 | 0.378 |  | 0.535 | <0.001\* |  | 0.206 | 0.192 |
| SII | 0.568 | <0.001\* |  | 0.299 | 0.068 |  | 0.555 | <0.001\* |  | 0.223 | 0.156 |
| MLR | 0.420 | 0.006\* |  | -0.040 | 0.814 |  | 0.266 | 0.085 |  | 0.185 | 0.242 |
| PLR | 0.353 | 0.024\* |  | 0.473 | 0.003\* |  | 0.236 | 0.127 |  | 0.183 | 0.246 |
| RDW-SD | 0.005 | 0.975 |  | 0.085 | 0.614 |  | 0.091 | 0.561 |  | 0.162 | 0.307 |
| RDW-CV | 0.132 | 0.410 |  | 0.143 | 0.391 |  | 0.345 | 0.024\* |  | 0.313 | 0.044\* |
| KL-6 | 0.240 | 0.131 |  | 0.003 | 0.987 |  | 0.031 | 0.844 |  | 0.123 | 0.439 |
| CTD |  |  |  |  |  |  |  |  |  |  |  |
| NLR | 0.539 | <0.001\* |  | 0.308 | 0.011\* |  | 0.303 | 0.011\* |  | 0.090 | 0.478 |
| SII | 0.577 | <0.001\* |  | 0.250 | 0.041\* |  | 0.350 | 0.003\* |  | 0.199 | 0.111 |
| MLR | 0.199 | 0.109 |  | 0.091 | 0.465 |  | 0.092 | 0.454 |  | -0.012 | 0.922 |
| PLR | 0.332 | 0.006\* |  | 0.377 | 0.002\* |  | 0.333 | 0.005\* |  | 0.358 | 0.003\* |
| RDW-SD | -0.151 | 0.226 |  | 0.154 | 0.213 |  | -0.022 | 0.859 |  | -0.105 | 0.405 |
| RDW-CV | -0.049 | 0.693 |  | 0.176 | 0.153 |  | 0.015 | 0.903 |  | -0.220 | 0.078 |
| KL-6 | 0.126 | 0.313 |  | 0.344 | 0.004\* |  | 0.023 |  0.852 |  | -0.017 | 0.895 |

CRP: C-reactive protein; ESR: Erythrocyte sedimentation rate; NLR: Neutrophil to lymphocyte ratio; SII: Systemic immune inflammation; MLR: Monocyte to lymphocyte ratio; PLR: Platelet to lymphocyte ratio; RDW-SD: Red blood cell distribution width standard deviation; RDW-CV: Red blood cell distribution width coefficient of variation; KL-6: Krebs von den Lungen-6.
\**P*<0.05

Table S2. Comparison between different CTD-ILD types in untreated or treated patients.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Untreated CTD-ILD | Treated CTD-ILD | *P* values |
| FVC | 2.52±0.76 | 2.47±0.85 | 0.762 |
| FVC% | 86.8±22.17 | 76 (65, 92.5) | 0.123 |
| FEV1 | 2.04±0.55 | 1.97±0.60 | 0.589 |
| FEV1% | 85.88±20.13 | 80.5 (64.75, 91) | 0.184 |
| DLCO | 4.55 (3.22, 5.84) | 4.02 (3.26, 5.39) | 0.541 |
| DLCO% | 61.87±20.71 | 56.79±17.82 | 0.252 |

FVC: forced vital capacity; FEV1: forced expired volume in one second; DLCO: diffusing capacity of the lungs for carbon monoxide

**\****P*<0.05

Table S3 Correlations between measured indicators and CRP or ESR in CTD-ILD and CTD patients.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | RA-ILD | PM/DM-ILD | SSc-ILD | SjS-ILD | Other CTD-ILD | *P* value |
| Untreated group |  |  |  |  |  |  |
| NLR | 3.35(1.81, 6.61) | 4.70±3.31 | 2.98±0.52 | 3.44±2.34 | 2.42(1.44, 6.91) | 0.964 |
| SII | 724.03(348.68, 1440.84) | 926.37±571.50 | 1072.49±307.86 | 547.94(257.32, 1687.77) | 379.75(294.97, 662.12) | 0.346 |
| MLR | 0.39±0.15 | 0.51(0.33, 0.82) | 0.45±0.19 | 0.36±0.18 | 0.29(0.17, 0.58) | 0.567 |
| PLR | 183.96(89.78, 216.23) | 194.57±112.04 | 227.43±87.59 | 138.83(98.77, 216.21) | 132.08(83.47, 185.44) | 0.659 |
| RDW-SD | 46.21±4.14 | 45.15(43.8, 47.55) | 46.21±4.14 | 45.2±2.87 | 49(44.75, 54.85) | 0.175 |
| RDW-CV | 13.41±0.73 | 13.25(13.2, 14.125) | 15.57±1.16 | 13.18±0.64 | 15(13.05, 15.95) | 0.046# |
| Treated group |  |  |  |  |  |  |
| NLR | 3.96(2.42, 7.94) | 2.86±1.27 | 2.45±0.87 | 4.79±1.19 | 5.31(3.75, 10.53) | 0.027# |
| SII | 898.63 (557.84, 1640.46) | 659.36±328.85 | 505.09±177.08 | 711.55±117.13 | 1336.29(808.04, 2412.34) | 0.089 |
| MLR | 0.4(0.24, 0.52) | 0.34±0.20 | 0.30±0.07 | 0.31±0.13 |  | 0.205 |
| PLR | 175.42(97.71, 252.56) | 131.66±57.28 | 202.16±128.15 | 176.33±68.44 | 257.97(203.13, 313.70) | 0.040# |
| RDW-SD | 49.8(46.6, 57.9) | 48.95±4.03 | 47.98±5.63 | 57.8±17.88 |  | 0.776 |
| RDW-CV | 15.21±1.81 | 13.94±0.82 | 14.24±1.72 | 16.1±5.02 | 14.1(13.6, 15.1) | 0.480 |

NLR: Neutrophil to lymphocyte ratio; SII: Systemic immune inflammation; MLR: Monocyte to lymphocyte ratio; PLR: Platelet to lymphocyte ratio; RDW-SD: Red blood cell distribution width standard deviation; RDW-CV: Red blood cell distribution width coefficient of variation; RA: rheumatoid arthritis; PM/DM: polymyositis/dermatomyositis; SjS: Sjögren syndrome; Other CTD: systemic lupus erythematosus, unspecified connective tissue disease, mixed connective tissue and ANCA-associated vasculitis.

#*P*<0.05： *P*<0.05 for multiple comparisons among groups, however, after Bonferroni correction, *P*＞0.05 between any two groups.

Table S4. Receiver operating characteristic curve of screening CTD-ILD patients from CTD patients.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameters | AUC | *P* value | Cut-off value | Sensitivity (%) | Specificity (%) |
| Untreated group |  |  |  |  |  |
| KL-6 (U/ml) | 0.929 | <0.001 | 255.88 | 87.8 | 87.1 |
| RDW-SD (fL) | 0.704 | <0.001 | 45.25 | 68.3 | 70.0 |
| MLR | 0.676 |  0.002 | 0.46 | 41.5 | 94.3 |
| NLR | 0.650 |  0.009 | 2.73 | 51.2 | 71.4 |
| All markers | 0.931 | <0.001 |  |  |  |
| Treated group |  |  |  |  |  |
| KL-6 (U/ml) | 0.924 | <0.001 | 401.41 | 75.0 | 97.1 |
| RDW-SD (fL) | 0.681 |  0.001 | 48.25 | 65.9 | 71.4 |
| RDW-CV (%) | 0.643 |  0.010 | 13.55 | 72.7 | 52.9 |
| NLR | 0.630 |  0.020 | 2.07 | 88.6 | 40.0 |
| SII (×109/L) | 0.619 |  0.033 | 392.74 | 84.1 | 41.4 |
| All markers | 0.940 | <0.001 |  |  |  |

KL-6: Krebs von den Lungen-6; RDW-SD: Red blood cell distribution width standard deviation; MLR: Monocyte to lymphocyte ratio; NLR: Neutrophil to lymphocyte ratio; RDW-CV: Red blood cell distribution width coefficient of variation; SII: Systemic immune inflammation.