**Supplementary Table 16. The comparison of the variation of contours by different radiologists and its impact on the calculation of COVID-19 risk score using radiomic feature only (lesion based analysis).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Tools　 | 　 | Volume | Surface Area | GOH\_Perrcentile(15) | GLCM\_Correlation\_(25,0,1) | ID\_Local\_Range\_Std | COVID-19 Risk Score |
| 　 |  |  |  | VALUE | 0.136×GOH\_Percentile\_(15) | VALUE | −6.769×GLCM\_Correlation\_(25,0,1) | VALUE | 0.33×ID\_Local\_Range\_Std | −55.389+0.136×GOH\_Percentile\_(15) −6.769×GLCM\_Correlation\_(25,0,1)+ 0.033×ID\_Local\_Range\_Std |
| IBEX | VOI\_R\_1 | 7.60116148 | 29.78872958 | 27.64055031 | 0.765019848 | 0.765019848 | 282.9975291 | 282.9975291 | 93.38918 | 34.9903 |
| VOI\_R\_2 | 7.380523205 | 28.66423369 | 27.96157074 | 0.736942978 | 0.736942978 | 299.604088 | 299.604088 | 98.86935 | 40.51412 |
| VOI\_R\_3 | 7.557709694 | 29.39070425 | 27.7712069 | 0.753244703 | 0.753244703 | 286.9724246 | 286.9724246 | 94.7009 | 36.31978 |
| VOI\_R\_4 | 7.671166897 | 30.00937155 | 28.22079126 | 0.755159522 | 0.755159522 | 297.6989717 | 297.6989717 | 98.24066 | 39.92069 |
| VOI\_R\_5 | 7.785590172 | 30.39869937 | 28.07342047 | 0.765072316 | 0.765072316 | 294.6415521 | 294.6415521 | 97.23171 | 38.8917 |
| 　 | Mean | 7.599230289 | 29.65034769 | 27.93350794 | 0.755087873 | 0.755087874 | 292.3829131 | 292.3829131 | 96.48636132 | 38.12732 |
| 　 | Std. Dev. | 0.122110168 | 0.539739667 | 0.189323596 | 0.011521424 | 0.009407203 | 7.121553811 | 5.814724317 | 2.350112758 | 2.377254346 |
| Pyradiomics | VOI\_R\_1 | 7.601  | 29.789  | 27.641  | 18.308 | 18.308  | 282.998 | 282.998  | 93.38934 | 34.99052 |
| VOI\_R\_2 | 7.381  | 28.664  | 27.962  | 17.636 | 17.636  | 299.604 | 299.604  | 98.86932 | 40.51415 |
| VOI\_R\_3 | 7.558  | 29.391  | 27.771  | 18.026 | 18.026  | 286.972 | 286.972  | 94.70076 | 36.31962 |
| VOI\_R\_4 | 7.671  | 30.009  | 28.221  | 18.072 | 18.072  | 297.699 | 297.699  | 98.24067 | 39.92073 |
| VOI\_R\_5 | 7.786  | 30.399  | 28.073  | 18.309 | 18.309  | 294.642 | 294.642  | 97.23186 | 38.89179 |
| 　 | Mean | 7.599  | 29.650  | 27.934  | 18.0702 | 18.071  | 292.383 | 292.383  | 96.48639 | 38.1273596 |
| 　 | Std. Dev | 0.134  | 0.591  | 0.207  | 0.275708542 | 0.247  | 7.121497806 | 6.370  | 2.350094276 | 2.377236656 |
| In-houseMATLAB code | VOI\_R\_1 | 7.60116  | 29.78873  | 27.64055  | 18.3082 | 18.30820  | 282.99753 | 282.99753  | 93.38918 | 34.9903 |
| VOI\_R\_2 | 7.38052  | 28.66423  | 27.96157  | 17.63627 | 17.63627  | 299.60409 | 299.60409  | 98.86935 | 40.51412 |
| VOI\_R\_3 | 7.55771  | 29.39070  | 27.77121  | 18.0264 | 18.02640  | 286.97242 | 286.97242  | 94.7009 | 36.31978 |
| VOI\_R\_4 | 7.67117  | 30.00937  | 28.22079  | 18.07222 | 18.07222  | 297.69897 | 297.69897  | 98.24066 | 39.92069 |
| VOI\_R\_5 | 7.78559  | 30.39870  | 28.07342  | 18.30945 | 18.30945  | 294.64155 | 294.64155  | 97.23171 | 38.8917 |
| 　 | Mean | 7.59923  | 29.65035  | 27.93351  | 18.070508 | 18.07051  | 292.382912 | 292.38291  | 96.48636096 | 38.12731805 |
| 　 | Std. Dev. | 0.13376  | 0.59126  | 0.20739  | 0.275727154 | 0.24662  | 7.121554412 | 6.36971  | 2.350112956 | 2.377254412 |

Abbreviation: VOI\_R\_i, the VOI contoured by the ith radiologist; Std. Dev., standard deviation