Supplementary table 1. Tumor Sizes of Thyroid Cancers According to the Histologic Subtype

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Total | 1~2 cm | 2-4 cm | ≥4 cm | *P* |
| cPTC | 251 | 198 (78.9) | 51 (20.3) | 2 (0.8) | <0.001 |
| fvPTC | 21 | 10 (47.6) | 8 (38.1) | 3 (14.3) |
| FTC | 22 | 5 (22.7) | 7 (31.8) | 10 (45.5) |
| MTC/PDTC/ATC | 6 | 2 (33.3) | 3 (50.0) | 1 (16.7) |

Data are presented as number (%). cPTC, conventional papillary thyroid carcinoma; fvPTC, follicular variant papillary thyroid carcinoma; FTC, follicular thyroid carcinoma; MTC, medullary thyroid carcinoma; PDTC, poorly differentiated thyroid carcinoma; ATC, anaplastic thyroid carcinoma.

Supplementary Table 2. Comparisons of AUCs Between CAD and Physicians Before and After CAD Assistance According to the Pathologic Subtype.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AUC | cPTC (n = 251) | | | |  | FTC and fvPTC (n = 43) | | | |
| CAD | Before | After | *P* |  | CAD | Before | After | *P* |
|  | 0.925 |  |  |  |  | 0.499 |  |  |  |
| E1 (0M) |  | 0.815**\*** | 0.864 | 0.009 |  |  | 0.520 | 0.539 | 0.616 |
| E2 (0M) |  | 0.761**\*** | 0.774 | 0.287 |  |  | 0.506 | 0.500 | 0.788 |
| E3 (0M) |  | 0.805**\*** | 0.864 | <0.001 |  |  | 0.501 | 0.520 | 0.613 |
| E4 (0M) |  | 0.815**\*** | 0.821 | 0.512 |  |  | 0.536 | 0.533 | 0.843 |
| E5 (0M) |  | 0.821**\*** | 0.847 | 0.008 |  |  | 0.566 | 0.599 | 0.167 |
| E6 (0M) |  | 0.778**\*** | 0.824 | <0.001 |  |  | 0.437 | 0.449 | 0.239 |
| E7 (0M) |  | 0.737**\*** | 0.800 | <0.001 |  |  | 0.532 | 0.480 | 0.167 |
| E8 (0M) |  | 0.744**\*** | 0.772 | 0.238 |  |  | 0.532 | 0.515 | 0.421 |
| E11 (1Y) |  | 0.854**\*** | 0.856 | 0.345 |  |  | 0.540 | 0.539 | 0.331 |
| E12 (1Y) |  | 0.843**\*** | 0.867 | 0.010 |  |  | 0.545 | 0.567 | 0.156 |
| E15 (>5Y) |  | 0.880**\*** | 0.895 | 0.023 |  |  | 0.567 | 0.548 | 0.448 |
| E16 (>5Y) |  | 0.873**\*** | 0.888 | 0.086 |  |  | 0.545 | 0.575 | 0.215 |
| E17 (>5Y) |  | 0.902 | 0.903 | 0.739 |  |  | 0.605 | 0.600 | 0.549 |

AUC, area under the curve; cPTC, conventional papillary thyroid carcinoma; FTC, follicular thyroid carcinoma; fvPTC, follicular variant papillary thyroid carcinoma; CAD, computer-aided diagnosis; Before, physicians before CAD assistance; After, physicians after CAD assistance.

E1-17, Physicians 1-17; M, month; Y, year. *P*, before vs. after CAD assistance. \*, *P* < 0.05 compared to CAD.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | CAD | E0 | | | | |  | E1 | | | | | |  | | E5 | | | | |
| Before | After | *P a* | *P b* |  | | | Before | After | *P a* | *P b* |  | | Before | | After | *P a* | *P b* |
| 1~2 cm |  |  |  |  |  |  | | |  |  |  |  |  | |  | |  |  |  |
| Sensitivity | 96.5 | 85.0% | 93.2% | <0.001 | <0.001 |  | | | 90.2% | 90.9% | 0.001 | 0.439 |  | | 96.1% | | 96.3% | 0.490 | 0.480 |
| Specificity | 46.3 | 35.2% | 38.9% | 0.061 | 0.340 |  | | | 50.9% | 50.9% | 0.294 | 0.548 |  | | 42.5% | | 44.4 | 0.333 | 0.45 |
| PPV | 86.8 | 83.4% | 85.3% | 0.099 | ⎯ |  | | | 87.5% | 87.6% | 0.410 | ⎯ |  | | 85.9 | | 86.3 | 0.392 | ⎯ |
| NPV | 78.1 | 37.4% | 68.7% | <0.001 | ⎯ |  | | | 56.3% | 57.8% | 0.009 | ⎯ |  | | 74.2% | | 75.0 | 0.392 | ⎯ |
| Accuracy | 85.7 | 74.3% | 81.5% | <0.001 | 0.003 |  | | | 81.7% | 82.3% | 0.055 | 0.371 |  | | 84.5% | | 85.1% | 0.334 | 0.425 |
| ≥2 cm |  |  |  |  |  |  | | |  |  |  |  |  | |  | |  |  |  |
| Sensitivity | 86.8 | 77.4% | 86.4% | 0.041 | 0.050 |  | | | 79.2% | 81.1% | 0.113 | 0.419 |  | | 88.7% | | 89.0% | 0.392 | 0.535 |
| Specificity | 80.3 | 53.7% | 65.0% | <0.001 | 0.046 |  | | | 78.7% | 81.1% | 0.451 | 0.364 |  | | 72.1% | | 73.2% | 0.096 | 0.474 |
| PPV | 79.3 | 62.8% | 71.3% | 0.005 | ⎯ |  | | | 78.8% | 82.4% | 0.538 | ⎯ |  | | 73.4% | | 76.3% | 0.194 | ⎯ |
| NPV | 87.5 | 70.0% | 84.5% | 0.002 | ⎯ |  | | | 83.3% | 84.8% | 0.261 | ⎯ |  | | 88.0% | | 86.3% | 0.515 | ⎯ |
| Accuracy | 83.3 | 64.7% | 74.6% | <0.001 | 0.014 |  | | | 78.9% | 81.1% | 0.147 | 0.313 |  | | 79.8% | | 81.5% | 0.207 | 0.359 |

Supplementary Table 3. Comparison of the Diagnostic Performance for PTCs in Different Size Groups Between CAD and Physicians Before and After CAD Assistance

ACR-TIRADS 4 was used as the cut-off to calculate the diagnostic performance of physicians. CAD, computer-aided diagnosis; E0/E1/E5, physicians with 0 month/1 year/5 years of experience; Before, physicians before CAD assistance; After, physicians after CAD assistance; PPV, positive predictive value; NPV, negative predictive value. *P a,* CAD vs. before; *P b*, before vs. after.