**Supplementary Table 6** Performance of the aMAP-CT model and related subgroup analysis in the training, validation, and test cohorts (with 95% confidence interval).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **N** | **HCC, n (%)** | **AUC** | **SEN** | **SPE** | **PPV** | **NPV** | **ACC** | **F1-score** |
| **Training cohort** | **809** | **24 (3.0)** | **0.869 [0.789 0.931]** | **0.792**  **[0.663, 0.885]** | **0.789**  **[0.756, 0.820]** | **0.103**  **[0.070, 0.150]** | **0.992**  **[0.984, 0.997]** | **0.789**  **[0.759, 0.818]** | **0.182**  **[0.122, 0.242]** |
| Males | 544 | 16 (2.9) | 0.836 [0.706 0.933] | 0.750  [0.525, 0.899] | 0.777  [0.736, 0.814] | 0.092  [0.050, 0.155] | 0.990  [0.759, 1.000] | 0.776  [0.737, 0.812] | 0.164  [0.098, 0.235] |
| Females | 265 | 8 (3.0) | 0.930 [0.873 0.976] | 0.875  [0.677, 0.996] | 0.813  [0.760, 0.860] | 0.127  [0.046, 0.266] | 0.995  [0.887, 1.000] | 0.815  [0.757, 0.868] | 0.222  [0.193, 0.376] |
| Age, years |  |  |  |  |  |  |  |  |  |
| ≤45 | 200 | 3 (1.5) | 0.942 [0.859 1.000] | 0.667  [0.594, 1.000] | 0.898  [0.842, 0.930] | 0.091  [0.071, 0.143] | 0.994  [0.852, 1.000] | 0.895  [0.814, 0.948] | 0.160  [0.090, 0.275] |
| 45-55 | 293 | 6 (2.1) | 0.852 [0.687 0.973] | 0.667  [0.525, 0.809] | 0.805  [0.736, 0.874] | 0.067  [0.050, 0.084] | 0.991  [0.774, 1.000] | 0.802  [0.737, 0.867] | 0.121  [0.098, 0.144] |
| ≥55 | 316 | 15 (4.8) | 0.838 [0.721 0.932] | 0.867  [0.757, 0.977] | 0.701  [0.633, 0.769] | 0.126  [0.104, 0.148] | 0.991  [0.974, 1.000] | 0.709  [0.639, 0.779] | 0.220  [0.193, 0.247] |
| aMAP score |  |  |  |  |  |  |  |  |  |
| low-risk | 49 | 1 (2.0) | 1.000 [1.000 1.000] | 1.000 | 0.958  [0.916, 1.000] | 0.333  [0.290, 0.376] | 1.000 | 0.959  [0.917, 1.000] | 0.500  [0.435, 0.565] |
| medium-risk | 324 | 5 (1.5) | 0.953 [0.918 0.984] | 0.800  [0.736, 0.864] | 0.912  [0.856, 0.968] | 0.125  [0.104, 0.146] | 0.997  [0.986, 1.000] | 0.910  [0.853, 0.967] | 0.216  [0.184, 0.248] |
| high-risk | 436 | 18 (4.1) | 0.809 [0.680 0.910] | 0.778  [0.712, 0.844] | 0.675  [0.604, 0.746] | 0.093  [0.075, 0.111] | 0.986  [0.969, 1.000] | 0.679  [0.608, 0.750] | 0.167  [0.141, 0.193] |
| **Validation cohort** | **348** | **11 (3.2)** | **0.809 [0.686 0.927]** | **0.727**  **[0.601, 0.853]** | **0.780**  **[0.713, 0.847]** | **0.098**  **[0.079, 0.117]** | **0.989**  **[0.973, 1.000]** | **0.779**  **[0.712, 0.846]** | **0.172**  **[0.144, 0.200]** |
| Males | 259 | 10 (3.9) | 0.801 [0.654 0.920] | 0.727  [0.650, 0.804] | 0.767  [0.689, 0.845] | 0.121  [0.099, 0.143] | 0.985  [0.968, 1.000] | 0.765  [0.686, 0.844] | 0.208  [0.180, 0.236] |
| Females | 89 | 1 (1.1) | 0.352 [0.261 0.466] | 0.000 | 0.818  [0.751, 0.885] | 0.000 | 0.986  [0.969, 1.000] | 0.809  [0.732, 0.886] | n.a. |
| Age, years |  |  |  |  |  |  |  |  |  |
| ≤45 | 96 | 2 (2.1) | 0.718 [0.398 0.989] | 0.500  [0.435, 0.565] | 0.883  [0.825, 0.941] | 0.083  [0.069, 0.097] | 0.988  [0.970, 1.000] | 0.875  [0.807, 0.943] | 0.143  [0.120, 0.166] |
| 45-55 | 136 | 4 (2.9) | 0.780 [0.613 0.925] | 0.500  [0.435, 0.565] | 0.818  [0.751, 0.885] | 0.077  [0.063, 0.091] | 0.982  [0.964, 1.000] | 0.809  [0.732, 0.886] | 0.133  [0.111, 0.155] |
| ≥55 | 116 | 5 (4.3) | 0.877 [0.783 0.961] | 1.000 | 0.649  [0.578, 0.720] | 0.114  [0.093, 0.135] | 1.000 | 0.664  [0.590, 0.738] | 0.204  [0.174, 0.234] |
| aMAP score |  |  |  |  |  |  |  |  |  |
| low-risk | 16 | 1 (6.3) | 0.933 [0.786 1.000] | 1.000 | 0.867  [0.803, 0.931] | 0.333  [0.290, 0.376] | 1.000 | 0.875  [0.807, 0.943] | 0.500  [0.435, 0.565] |
| medium-risk | 157 | 3 (1.9) | 0.742 [0.471 0.968] | 0.333  [0.290, 0.376] | 0.922  [0.866, 0.978] | 0.077  [0.063, 0.091] | 0.986  [0.969, 1.000] | 0.911  [0.854, 0.968] | 0.125  [0.104, 0.146] |
| high-risk | 175 | 7 (4.0) | 0.816 [0.680 0.926] | 0.857  [0.791, 0.923] | 0.643  [0.570, 0.716] | 0.091  [0.075, 0.107] | 0.991  [0.976, 1.000] | 0.651  [0.577, 0.725] | 0.164  [0.138, 0.190] |
| **Test cohort** | **1254** | **83 (6.6)** | **0.815 [0.762 0.868]** | **0.602**  **[0.511, 0.693]** | **0.878**  **[0.803, 0.953]** | **0.259**  **[0.220, 0.298]** | **0.969**  **[0.951, 0.987]** | **0.860**  **[0.785, 0.935]** | **0.362**  **[0.318, 0.406]** |
| Males | 1075 | 78 (7.3) | 0.826 [0.774 0.874] | 0.628  [0.530, 0.726] | 0.876  [0.808, 0.944] | 0.283  [0.242, 0.324] | 0.968  [0.945, 0.991] | 0.858  [0.786, 0.930] | 0.390  [0.341, 0.439] |
| Females | 179 | 5 (2.8) | 0.640 [0.493 0.834] | 0.200  [0.170, 0.230] | 0.891  [0.825, 0.957] | 0.050  [0.041, 0.059] | 0.975  [0.958, 0.992] | 0.872  [0.802, 0.942] | 0.080  [0.067, 0.093] |
| Age, years |  |  |  |  |  |  |  |  |  |
| ≤45 | 479 | 16 (3.3) | 0.734 [0.581 0.868] | 0.375  [0.320, 0.430] | 0.948  [0.912, 0.984] | 0.200  [0.170, 0.230] | 0.978  [0.961, 0.995] | 0.929  [0.873, 0.985] | 0.261  [0.220, 0.302] |
| 45-55 | 477 | 34 (7.1) | 0.881 [0.820 0.935] | 0.706  [0.635, 0.777] | 0.871  [0.807, 0.935] | 0.296  [0.252, 0.340] | 0.975  [0.958, 0.992] | 0.860  [0.792, 0.928] | 0.417  [0.363, 0.471] |
| ≥55 | 298 | 33 (11.1) | 0.718 [0.621 0.813] | 0.606  [0.536, 0.676] | 0.766  [0.690, 0.842] | 0.244  [0.205, 0.283] | 0.940  [0.899, 0.981] | 0.748  [0.673, 0.823] | 0.348  [0.298, 0.398] |
| aMAP score |  |  |  |  |  |  |  |  |  |
| low-risk | 180 | 5 (2.8) | 0.725 [0.298 0.968] | 0.000 | 0.989  [0.996, 1.000] | 0.000 | 0.972  [0.955, 0.989] | 0.961  [0.730, 0.992] | n.a. |
| medium-risk | 671 | 26 (3.9) | 0.803 [0.719 0.882] | 0.423  [0.372, 0.474] | 0.953  [0.912, 0.994] | 0.268  [0.128, 0.308] | 0.976  [0.758, 0.994] | 0.933  [0.674, 0.992] | 0.328  [0.281, 0.375] |
| high-risk | 403 | 52 (12.9) | 0.765 [0.678 0.844] | 0.750  [0.679, 0.821] | 0.684  [0.604, 0.764] | 0.260  [0.220, 0.300] | 0.949  [0.912, 0.986] | 0.692  [0.614, 0.770] | 0.386  [0.335, 0.437] |

Note: The values in square brackets represent the 95% confidence interval. Abbreviations: SEN, sensitivity; SPE, specificity; PPV, positive predictive value; NPV, negative predictive value; ACC, accuracy; HCC, hepatocellular carcinoma.