**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.