

Supplementary Table S1: Univariate analysis of clinicopathological features and combined gene mutations

| Clinicopathological features | | A | B | C | D | p-values | | | |
|---|----------------|-----------------------------------|-------------------------------------|----------------------------------|------------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| | | BRAFwt/TERTpwt n = 79 n (%) | BRAFmut/TERTpwt n = 120 n (%) | BRAFwt/TERTpmt n = 4 n (%) | BRAFmut/TERTpmt n = 11 n (%) | A... vs ...B... | A... vs ...C... | A... vs ...D | .B.. vs ...D |
| Patient characteristics | | | | | | | | | |
| Age | Mean ± Std | 51.1 ± 14.3 | 50.2 ± 15.2 | 55.8 ± 16.3 | 67.7 ± 14.6 | 0.691 | 0.610 | 0.004 | 0.003 |
| | Female | 68 (86.1%) | 102 (85%) | 3 (75%) | 7 (63.6%) | 0.833 | 0.539 | 0.082 | 0.089 |
| Gender | Male | 11 (13.9%) | 18 (15%) | 1 (25%) | 4 (36.4%) | | | | |
| Histological characteristics | | | | | | | | | |
| Nodule size | Median ± IR | 12.0 ± 9.0 | 11.0 ± 9.0 | 26.5 ± 17.0 | 20.0 ± 16.0 | 0.158 | 0.041 | 0.267 | 0.057 |
| Solid component | Absent | 66 (83.5%) | 117 (97.5%) | 3 (75%) | 9 (81.8%) | <0.001 | 0.530 | 1.000 | 0.056 |
| | Present | 13 (16.5%) | 3 (2.5%) | 1 (25%) | 2 (18.2%) | | | | |
| Inflammatory infiltrate | Absent | 18 (22.8%) | 6 (5%) | 1 (25%) | 0 (0%) | <0.001 | 1.000 | 0.112 | 1.000 |
| | Present | 61 (77.2%) | 114 (95%) | 3 (75%) | 11 (100%) | | | | |
| Fibrosis | Absent | 11 (13.9%) | 5 (4.2%) | 0 (0%) | 0 (0%) | 0.013 | 1.000 | 0.347 | 1.000 |
| | Present | 68 (86.1%) | 115 (95.8%) | 4 (100%) | 11 (100%) | | | | |
| Venous invasion | Absent | 70 (88.6%) | 116 (96.7%) | 3 (75%) | 9 (81.8%) | 0.024 | 0.408 | 0.619 | 0.080 |
| | Present | 9 (11.4%) | 4 (3.3%) | 1 (25%) | 2 (18.2%) | | | | |
| Lymph vessel invasion | Absent | 69 (87.3%) | 94 (78.3%) | 2 (50%) | 6 (54.5%) | 0.106 | 0.098 | 0.017 | 0.130 |
| | Present | 10 (12.7%) | 26 (21.7%) | 2 (50%) | 5 (45.5%) | | | | |
| Nodule growth pattern | Expansive | 59 (74.7%) | 54 (45%) | 4 (100%) | 2 (18.2%) | <0.001 | 0.568 | <0.001 | 0.115 |
| | Infiltrative | 20 (25.3%) | 66 (55%) | 0 (0%) | 9 (81.8%) | | | | |
| Minimal extrathyroidal extension | Absent | 61 (78.2%) | 52 (45.6%) | 2 (50%) | 3 (37.5%) | <0.001 | 0.228 | 0.024 | 0.729 |
| | Minimal | 17 (21.8%) | 62 (54.4%) | 2 (50%) | 5 (62.5%) | | | | |
| Gross extrathyroidal extension | Absent/minimal | 78 (98.7%) | 114 (95%) | 4 (100%) | 8 (72.7%) | 0.162 | 1.000 | 0.005 | 0.028 |
| | Gross | 1 (1.3%) | 6 (5%) | 0 (0%) | 3 (27.3%) | | | | |
| | R0 | 72 (91.1%) | 104 (86.7%) | 3 (75%) | 8 (72.7%) | | | | |
| Resection margins | R1/R2 | 7 (8.9%) | 16 (13.3%) | 1 (25%) | 3 (27.3%) | 0.334 | 0.339 | 0.102 | 0.200 |
| | Absent | 78 (98.7%) | 101 (84.2%) | 4 (100%) | 8 (72.7%) | | | | |
| Central lymph node metastasis | Present | 1 (1.3%) | 19 (15.8%) | 0 (0%) | 3 (27.3%) | 0.001 | 1.000 | 0.005 | 0.394 |
| | Absent | 79 (100%) | 116 (96.7%) | 4 (100%) | 8 (72.7%) | | | | |
| Extranodal extension of central lymph node metastasis | Present | 0 (0%) | 4 (3.3%) | 0 (0%) | 3 (27.3%) | 0.153 | - | 0.001 | 0.013 |
| | Absent | 74 (93.7%) | 112 (93.3%) | 4 (100%) | 8 (72.7%) | | | | |
| Lateral lymph node metastasis | Present | 5 (6.3%) | 8 (6.7%) | 0 (0%) | 3 (27.3%) | 0.153 | 1.000 | 0.055 | 0.050 |
| | Absent | 77 (97.5%) | 120 (100%) | 4 (100%) | 8 (72.7%) | | | | |
| Extranodal extension of lateral lymph node metastasis | Present | 2 (2.5%) | 0 (0%) | 0 (0%) | 3 (27.3%) | 0.156 | 1.000 | 0.012 | <0.001 |
| | Absent | 77 (97.5%) | 120 (100%) | 4 (100%) | 8 (72.7%) | | | | |
| Staging | | | | | | | | | |
| T stage | T1-T2 | 73 (92.4%) | 112 (93.3%) | 4 (100%) | 8 (72.7%) | 0.802 | 1.000 | 0.077 | 0.050 |
| | T3-T4 | 6 (7.6%) | 8 (6.7%) | 0 (0%) | 3 (27.3%) | | | | |
| N stage | N0 | 73 (92.4%) | 100 (83.3%) | 4 (100%) | 8 (72.7%) | 0.063 | 1.000 | 0.077 | 0.407 |
| | N1 | 6 (7.6%) | 20 (16.7%) | 0 (0%) | 3 (27.3%) | | | | |
| M stage | M0 | 78 (98.7%) | 120 (100%) | 3 (75%) | 9 (81.8%) | 0.397 | 0.095 | 0.038 | 0.006 |
| | M1 | 1 (1.3%) | 0 (0%) | 1 (25%) | 2 (18.2%) | | | | |
| Stage | SI | 76 (96.2%) | 114 (95%) | 3 (75%) | 6 (54.5%) | 0.355 | 0.182 | <0.001 | <0.001 |
| | SII | 2 (2.5%) | 6 (5%) | 0 (0%) | 3 (27.3%) | | | | |
| | SIVB | 1 (1.3%) | 0 (0%) | 1 (25%) | 2 (18.2%) | | | | |
| RAI treatment | | | | | | | | | |
| RAI number of treatments | 1 | 53 (93%) | 79 (85.9%) | 2 (50%) | 6 (66.7%) | 0.184 | 0.045 | 0.048 | 0.151 |
| | >1 | 4 (7%) | 13 (14.1%) | 2 (50%) | 3 (33.3%) | | | | |
| Risk stratification | | | | | | | | | |
| Risk stratification (RAI treated) | Low | 32 (56.1%) | 31 (33.7%) | 0 (0%) | 1 (11.1%) | 0.024 | 0.036 | 0.002 | 0.007 |
| | Intermediate | 22 (38.6%) | 55 (59.8%) | 3 (75%) | 4 (44.4%) | | | | |
| | High | 3 (5.3%) | 6 (6.5%) | 1 (25%) | 4 (44.4%) | | | | |
| Risk stratification (non-RAI treated) | Low | 19 (86.4%) | 18 (64.3%) | 0 (0%) | 1 (50%) | 0.108 | - | 0.094 | 0.067 |
| | Intermediate | 3 (13.6%) | 10 (35.7%) | 0 (0%) | 0 (0%) | | | | |
| | High | 0 (0%) | 0 (0%) | 0 (0%) | 1 (50%) | | | | |
| Global dynamic risk stratification (RAI treated) | Excelent | 52 (91.2%) | 90 (97.8%) | 2 (50%) | 5 (55.6%) | 0.107 | 0.061 | 0.016 | <0.001 |
| | Incomplete | 5 (8.8%) | 2 (2.2%) | 2 (50%) | 4 (44.4%) | | | | |
| Global dynamic risk stratification (non-RAI treated) | Excelent | 21 (95.5%) | 27 (96.4%) | 0 (0%) | 2 (100%) | 1.000 | - | 1.000 | 1.000 |
| | Incomplete | 1 (4.5%) | 1 (3.6%) | 0 (0%) | 0 (0%) | | | | |