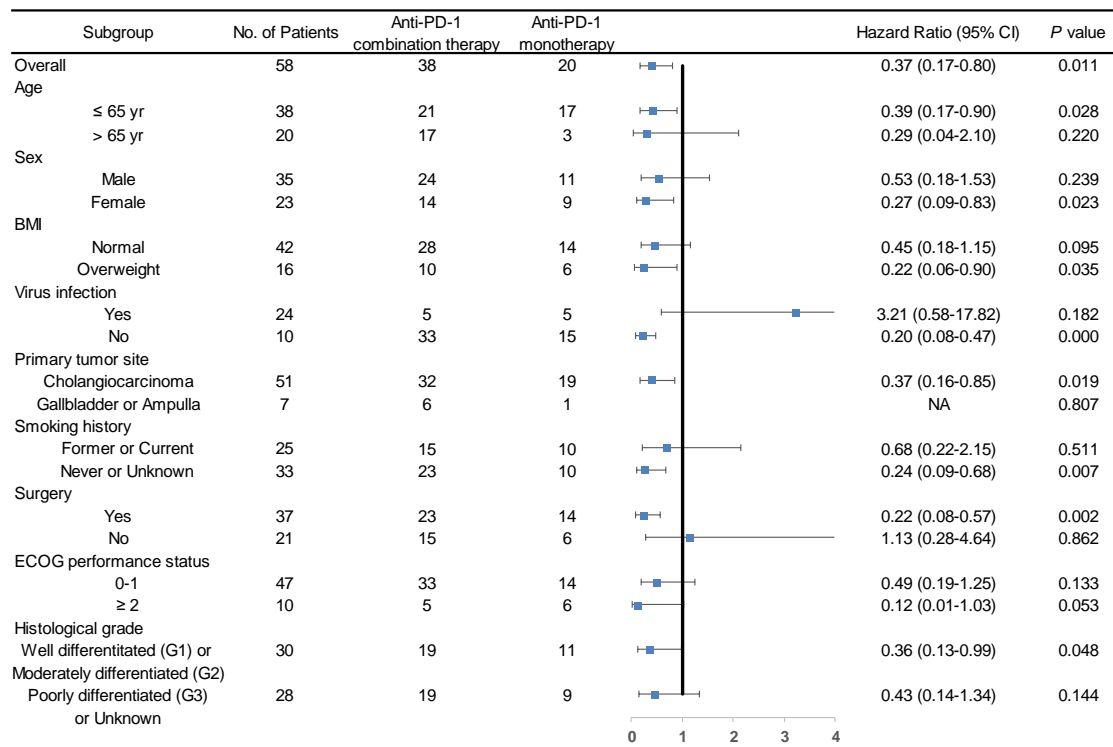
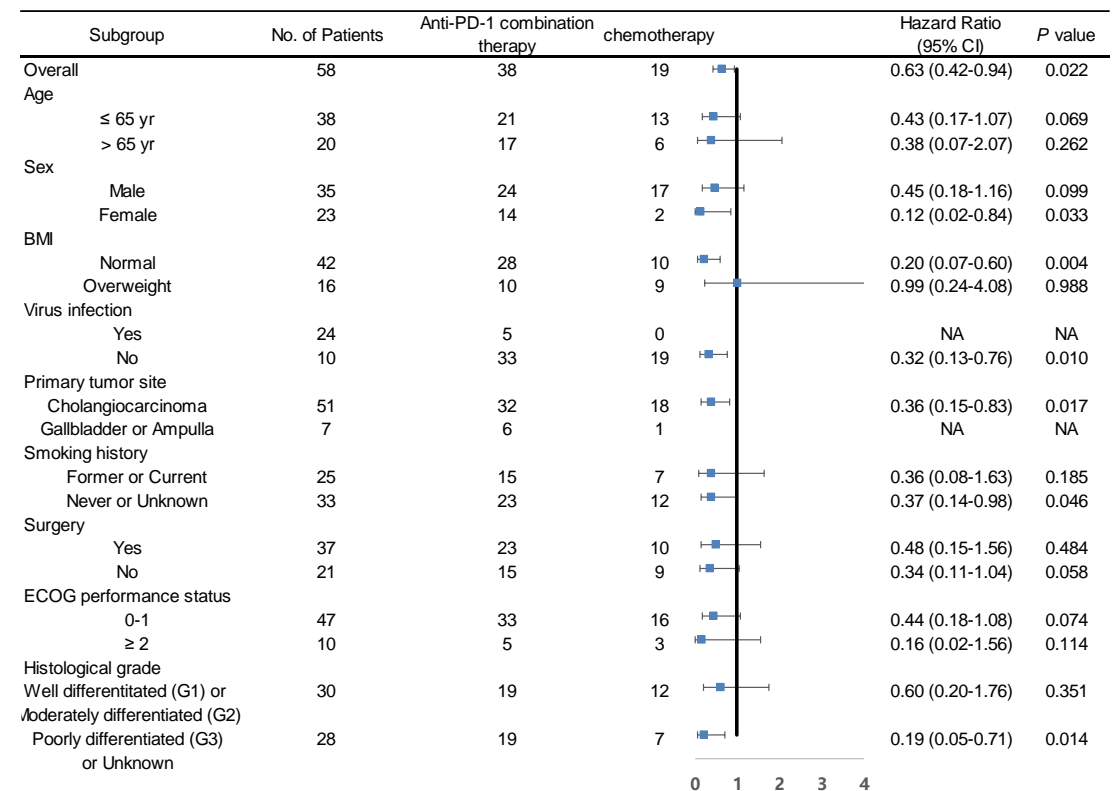


a**b**

Supplementary Figure S1. Forest plots of overall survival in patient subgroups. Subgroup analysis of overall survival between patients in anti-PD-1 combination group and monotherapy group (a) or between patients in anti-PD-1 combination therapy group and chemotherapy group (b).

Supplementary Table S1 Treatment received by patients in the anti-PD-1 combination, monotherapy and chemotherapy group.

| Patient | Drug | Cycle | Patient | Drug | Cycle |
|------------------------------------|---------------------------------------|-------|------------|---------------------------------------|-------|
| Anti-PD-1 combination group | | | | | |
| Patient 1 | nivolumab + gemcitabine | 5 | Patient 20 | nivolumab + S-1 | 1 |
| Patient 2 | nivolumab + paclitaxel-albumin | 5 | Patient 21 | pembrolizumab + oxaliplatin + tegafur | 6 |
| Patient 3 | pembrolizumab + paclitaxel-albumin | 4 | Patient 22 | nivolumab + gemcitabine + cisplatin | 3 |
| Patient 4 | pembrolizumab + gemcitabine | 1 | Patient 23 | nivolumab + gemcitabine + cisplatin | 3 |
| Patient 5 | pembrolizumab + oxaliplatin + tegafur | 4 | Patient 24 | nivolumab + gemcitabine + cisplatin | 8 |
| Patient 6 | nivolumab + paclitaxel-albumin + S-1 | 16 | Patient 25 | nivolumab + gemcitabine + cisplatin | 6 |
| Patient 7 | nivolumab + gemcitabine | 4 | Patient 26 | nivolumab + gemcitabine + cisplatin | 4 |
| Patient 8 | nivolumab + S-1 | 2 | Patient 27 | nivolumab + gemcitabine + cisplatin | 8 |
| Patient 9 | nivolumab + gemcitabine + cisplatin | 8 | Patient 28 | nivolumab + gemcitabine + cisplatin | 6 |
| Patient 10 | nivolumab + gemcitabine + cisplatin | 6 | Patient 29 | nivolumab + gemcitabine + cisplatin | 4 |
| Patient 11 | nivolumab + gemcitabine + cisplatin | 2 | Patient 30 | nivolumab + gemcitabine + cisplatin | 2 |
| Patient 12 | nivolumab + paclitaxel-albumin | 6 | Patient 31 | nivolumab + gemcitabine + cisplatin | 5 |
| Patient 13 | nivolumab + gemcitabine + cisplatin | 4 | Patient 32 | nivolumab + gemcitabine + cisplatin | 3 |
| Patient 14 | pembrolizumab + docetaxel | 2 | Patient 33 | nivolumab + gemcitabine + cisplatin | 4 |
| Patient 15 | pembrolizumab + S-1 | 3 | Patient 34 | nivolumab + gemcitabine + cisplatin | 6 |
| Patient 16 | nivolumab + S-1 | 3 | Patient 35 | nivolumab + gemcitabine + cisplatin | 9 |
| Patient 17 | nivolumab + gemcitabine + cisplatin | 4 | Patient 36 | nivolumab + gemcitabine + cisplatin | 3 |
| Patient 18 | nivolumab + gemcitabine + cisplatin | 4 | Patient 37 | nivolumab + gemcitabine + cisplatin | 3 |
| Patient 19 | nivolumab + gemcitabine + cisplatin | 4 | Patient 38 | nivolumab + gemcitabine + cisplatin | 2 |
| Anti-PD-1 monotherapy group | | | | | |
| Patient 1 | pembrolizumab | 6 | Patient 11 | pembrolizumab | 1 |
| Patient 2 | pembrolizumab | 1 | Patient 12 | nivolumab | 7 |
| Patient 3 | nivolumab | 18 | Patient 13 | nivolumab | 1 |
| Patient 4 | nivolumab | 2 | Patient 14 | nivolumab | 5 |
| Patient 5 | nivolumab | 2 | Patient 15 | nivolumab | 1 |
| Patient 6 | nivolumab | 1 | Patient 16 | nivolumab | 2 |
| Patient 7 | pembrolizumab | 1 | Patient 17 | nivolumab | 1 |
| Patient 8 | nivolumab | 3 | Patient 18 | nivolumab | 7 |
| Patient 9 | nivolumab | 6 | Patient 19 | pembrolizumab | 2 |
| Patient 10 | nivolumab | 3 | Patient 20 | pembrolizumab | 5 |
| Chemotherapy group | | | | | |
| Patient 1 | gemcitabine + S-1 | 1 | Patient 11 | gemcitabine + cisplatin | 2 |
| Patient 2 | gemcitabine + carboplatin | 3 | Patient 12 | gemcitabine + cisplatin | 2 |
| Patient 3 | oxaliplatin + tegafur | 1 | Patient 13 | paclitaxel-albumin + cisplatin | 5 |
| Patient 4 | gemcitabine + S-1 | 2 | Patient 14 | gemcitabine + capecitabine | 2 |
| Patient 5 | oxaliplatin + tegafur | 1 | Patient 15 | paclitaxel-albumin + S-1 | 2 |
| Patient 6 | gemcitabine + S-1 | 1 | Patient 16 | gemcitabine + cisplatin | 6 |
| Patient 7 | paclitaxel-albumin + S-1 | 4 | Patient 17 | gemcitabine + S-1 | 2 |
| Patient 8 | gemcitabine + cisplatin | 2 | Patient 18 | gemcitabine + capecitabine | 6 |

| | | | | | |
|------------|--|---|------------|-------------------------|---|
| Patient 9 | S-1 | 6 | Patient 19 | gemcitabine + cisplatin | 8 |
| Patient 10 | paclitaxel-albumin + cyclophosphamide | 2 | | | |
