|  |  |  |
| --- | --- | --- |
| Risk Factors | Univariate analysis | Multivariate analysis |
| HR (95%CI) | *P* b | HR (95%CI) | *P* b |
| Age |  |  |  |  |
| <70 | 1 |  | 1 |  |
| ≥70 | 1.48(1.43-1.53) | <0.001 | 1.66(1.6-1.72) | <0.001 |
| Gender |  |  |  |  |
| Female | 1 |  | 1 |  |
| Male | 1.09(1.05-1.12) | <0.001 | 1.16(1.12-1.20) | <0.001 |
| Marital status |  |  |  |  |
| Married | 1 |  | 1 |  |
| Unmarried | 1.45(1.39-1.52) | <0.001 | 1.33(1.27-1.40) | <0.001 |
| Divorced | 1.44(1.38-1.49) | <0.001 | 1.32(1.27-1.37) | <0.001 |
| Race |  |  |  |  |
| White | 1 |  | 1 |  |
| Black | 1.38(1.32-1.45) | <0.001 | 1.38(1.32-1.45) | <0.001 |
| Other | 0.94(0.88-0.99) | 0.027 | 0.90(0.85-0.95) | 0.426  |
| Location |  |  |  |  |
| Left | 1 |  | 1 | - |
| Right | 0.98(0.95-1.02) | 0.286 | 1.02(0.98-1.06) | <0.001 |
| Histology |  |  |  |  |
| Adenocarcinoma | 1 |  | 1 |  |
| Mucinous adenocarcinoma | 1.22(1.16-1.28) | <0.001 | 1.13(1.07-1.18) | <0.001 |
| Signet ring cell carcinoma | 3.45(3.09-3.85) | <0.001 | 1.71(1.53-1.91) | <0.001 |
| Differentiated grade |  |  |  |  |
| Grade I | 1 |  | 1 |  |
| Grade II | 1.37(1.28-1.48) | <0.001 | 1.23(1.15-1.33) | <0.001 |
| Grade III | 2.49(2.31-2.69) | <0.001 | 1.63(1.51-1.77) | <0.001 |
| T-classification a |  |  |  |  |
|  T1 | 1 |  | 1 |  |
|  T2 | 0.77(0.70-0.85) | <0.001 | 0.96(0.87-1.06) | 0.407 |
| T3 | 2.16(1.99-2.34) | <0.001 | 2.18(2.00-2.37) |  |
| T4 | 5.44(5.00-5.92) | <0.001 | 4.82(4.40-5.27) | <0.001 |
| N- classification a |  |  |  |  |
| N0 | 1 |  | 1 |  |
| N1 | 2.10(2.02-2.18) | <0.001 | 2.10(2.01-2.19) | <0.001 |
| N2 | 4.07(3.91-4.24) | <0.001 | 4.07(3.89-4.27) | <0.001 |
| nLN |  |  |  |  |
| 0 | 1 |  | 1 |  |
| 0-2 | 0.53(0.47-0.60) | <0.001  | 0.45(0.40-0.52) | <0.001 |
| 3-5 | 0.58(0.54-0.63) | <0.001 | 0.43(0.39-0.47) | <0.001 |
| 6-11 | 0.54(0.51-0.58) | <0.001 | 0.32(0.30-0.35) | <0.001 |
| ≥12 | 0.44(0.42-0.47) | <0.001 | 0.23(0.21-0.24) | <0.001 |
| CT  |  |  |  |  |
| Yes | 1 |  | 1 |  |
| No | 1.54(1.49-1.59) | <0.001 | 0.81(0.78-0.85) | <0.001 |
| RT |  |  |  |  |
| Yes | 1 |  | 1 |  |
| No | 1.24(1.19-1.29) | <0.001 | 1.20(1.15-1.26) | <0.001 |

a T classification according to 7th AJCC staging system.

b *P* values obtained from the χ2 test. All statistical tests were two-sided.

Abbreviations: PSM: propensity score matching; nLN: number of lymph nodes; CT: chemotherapy treatment; RT: radiotherapy treatment; HR: hazard ratio.

Left includes rectum, rectosigmoid junction, sigmoid colon, descending colon and splenic flexure.

Right includes transverse colon, hepatic flexure, ascending colon, cecum, and appendix.