**Supplemental Table 1. Risk factors for CVD among thyroid cancer survivors, >5-10 years and >10 years after cancer diagnosis**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Cardiovascular disease** | | | | | |
|  | **>5-10 years** | | | **>10 years** | | |
| **(n=2,879)** | | | **(n=1,333)** | | |
|  | HR | 95% CI | | HR | 95% CI | |
| **Diagnosis year a** |  |  |  |  |  |  |
| 1997-1999 | Reference | | | Reference | | |
| 2000-2004 | 1.23\* | [1.03, | 1.48] | 0.91\* | [0.76, | 1.10] |
| 2005-2009 | 1.20\* | [1.01, | 1.43] | **0.34**\* | **[0.21,** | **0.55]** |
| 2010-2012 | **0.53**\* | **[0.36,** | **0.78]** | **-** | - | |
| **Age at diagnosis b** |  |  |  |  |  |  |
| < 40 years | Reference | | | Reference | | |
| 40-65 years | **1.50** | **[1.29,** | **1.73]** | **1.56**\* | **[1.27,** | **1.91]** |
| 65+ years | **2.75** | **[2.32,** | **3.26]** | **2.24**\* | **[1.72,** | **2.93]** |
| **Sex** |  |  |  |  |  |  |
| Female | Reference | | | Reference | | |
| Male | **1.38** | **[1.21,** | **1.57]** | 1.12 | [0.91, | 1.38] |
| **BMI at baseline c** |  |  |  |  |  |  |
| <18 kg/m2 | 1.04 | [0.60, | 1.81] | 0.83 | [0.34 | 2.03] |
| 18-24.9 kg/m2 | Reference | | | Reference | | |
| 25-29.9 kg/m2 | **1.22** | **[1.07,** | **1.40]** | 1.09 | [0.89, | 1.34] |
| 30+ kg/m2 | **1.54** | **[1.33,** | **1.80]** | **1.27** | **[1.01,** | **1.59]** |
| **Cancer stage at diagnosis d** |  |  |  |  |  |  |
| Localized | Reference | | | Reference | | |
| Regional | 0.94 | [0.81, | 1.08] | 1.23 | [0.99, | 1.51] |
| Distant | 1.06 | [0.73, | 1.55] | 0.91 | [0.47, | 1.77] |
| **Treatment e** |  |  |  |  |  |  |
| Surgery only | Reference | | | Reference | | |
| Surgery & Radiation | 1.12 | [0.99, | 1.27] | 1.18 | [0.98, | 1.41] |
| Other | 1.11 | [0.55, | 2.27] | 0.33 | [0.08, | 1.35] |
| **TSH suppression therapy e** |  |  |  |  |  |  |
| No | Reference | | | Reference | | |
| Yes | **1.29**\* | **[1.11,** | **1.49]** | 1.01 | [0.74, | 1.37] |
| **CCI score at baseline f** |  |  |  |  |  |  |
| 0 | Reference | | | Reference | | |
| 1+ | **3.78** | **[3.20,** | **4.47]** | **3.89**\* | **[3.06,** | **4.95]** |

\* For the models that violated proportional hazards assumptions, we used Cox models with cubic splines

a Adjusted for age at diagnosis, BMI at baseline, and CCI score.

b Adjusted for diagnosis year, race, sex, BMI at baseline, and CCI score.

c Adjusted for diagnosis year, age at diagnosis, race, sex, and CCI score.

d Adjusted for diagnosis year, age at diagnosis, race, sex, BMI at baseline, and CCI score.

e Adjusted for diagnosis year, age at diagnosis, race, sex, BMI at baseline, cancer stage at diagnosis, and CCI score.

f Adjusted for diagnosis year, age at diagnosis, race, sex, and BMI at baseline.

**Supplemental Table 2. Risk factors for CVD subgroup, >5-10 years after cancer diagnosis among thyroid cancer survivors (n=2,879)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Cardiovascular disease subgroup** | | | | | | | | | | | | | | |
|  | **Hypertension**  **(n=786)** | | | **Heart disease**  **(n=606)** | | | **Cerebrovascular disease**  **(n=100)** | | | **Diseases of arteries/arterioles/**  **capillaries**  **(n=324)** | | | **Diseases of veins/lymphatics**  **(n=376)** | | |
|  | HR | 95% CI | | HR | 95% CI | | HR | 95% CI | | HR | 95% CI | | HR | 95% CI | |
| **Diagnosis year a** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997-1999 | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 2000-2004 | 1.14\* | [0.92, | 1.43] | 1.08\* | [0.84, | 1.37] | 1.25\* | [0.68, | 2.30] | 0.90\* | [0.65, | 1.24] | **1.43**\* | **[1.04,** | **1.96]** |
| 2005-2009 | 1.18\* | [0.95, | 1.46] | 1.09\* | [0.86, | 1.39] | 1.19\* | [0.65, | 2.17] | 1.05\* | [0.77, | 1.44] | 1.23\* | [0.89, | 1.69] |
| 2010-2012 | **0.53**\* | **[0.34,** | **0.84]** | **0.30**\* | **[0.14,** | **0.65]** | - | - | | 0.59\* | [0.25, | 1.39] | 0.40\* | [0.14, | 1.11] |
| **Age at diagnosis b** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| < 40 years | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 40-65 years | **1.94** | **[1.58,** | **2.37** | **1.36** | **[1.10,** | **1.69]** | **1.96** | **[1.04,** | **3.71]** | **1.88** | **[1.36,** | **2.60]** | **1.74** | **[1.32,** | **2.30]** |
| 65+ years | **4.15** | **[3.32,** | **5.18** | **2.97** | **[2.34,** | **3.76]** | **5.08** | **[2.64,** | **9.78]** | **4.43** | **[3.13,** | **6.27]** | **2.11** | **[1.54,** | **2.91]** |
| **Sex** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Female | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Male | **1.73** | **[1.48,** | **2.02]** | **1.40** | **[1.17,** | **1.68]** | 1.43 | [0.92, | 2.23] | **1.37** | **[1.07,** | **1.76]** | **1.26** | **[1.00,** | **1.59]** |
| **BMI at baseline c** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <18 kg/m2 | 0.57 | [0.18, | 1.77] | 1.38 | [0.68, | 2.81] | - | - | | 0.74 | [0.18, | 3.02] | 0.78 | [0.25, | 2.48] |
| 18-24.9 kg/m2 | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 25-29.9 kg/m2 | **1.41** | **[1.18,** | **1.67]** | 1.10 | [0.91, | 1.34] | 0.97 | [0.60, | 1.57] | 0.98 | [0.75, | 1.28] | 1.18 | [0.93, | 1.50] |
| 30+ kg/m2 | **2.04** | **[1.70,** | **2.45]** | **1.49** | **[1.21,** | **1.83]** | 1.32 | [0.81, | 2.16] | **1.37** | **[1.04,** | **1.82]** | 1.08 | [0.82, | 1.41] |
| **Cancer stage at diagnosis d** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Localized | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Regional | 0.96 | [0.81, | 1.15] | 1.05 | [0.86, | 1.28] | 0.92 | [0.56, | 1.52] | 1.00 | [0.76, | 1.31] | 1.00 | [0.78, | 1.29] |
| Distant | 1.05 | [0.68, | 1.63] | 1.00 | [0.61, | 1.66] | 1.03 | [0.32, | 3.29] | 1.31 | [0.71, | 2.41] | 0.79 | [0.37, | 1.68] |
| **Treatment e** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Surgery only | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Surgery & Radiation | 1.14 | [0.98, | 1.32] | 1.06 | [0.90, | 1.26] | **1.79** | **[1.17,** | **2.73]** | 1.11 | [0.88, | 1.40] | 1.03 | [0.83, | 1.28] |
| Other | 1.09 | [0.48, | 2.48] | 0.98 | [0.40, | 2.40] | 1.79 | [0.24, | 13.50] | 1.13 | [0.35, | 3.63] | **2.89** | **[1.27,** | **6.61]** |
| **TSH suppression therapy e** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Yes | **1.25**\* | **[1.04,** | **1.50]** | 1.14\* | [0.92, | 1.41] | **1.89**\* | **[1.19,** | **3.02]** | 1.20\* | [0.90, | 1.59] | 1.29\* | [0.99, | 1.67] |
| **CCI score at baseline f** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 1+ | **4.93** | **[3.84,** | **6.32]** | **2.91** | **[2.29,** | **3.68]** | **5.94** | **[2.52,** | **14.01]** | **2.82** | **[1.99,** | **3.99]** | **6.00** | **[4.12,** | **8.74]** |

\* For the models that violated proportional hazards assumptions, we used flexible cubic spline models

a Adjusted for age at diagnosis, BMI at baseline, and CCI score.

b Adjusted for diagnosis year, race, sex, BMI at baseline, and CCI score.

c Adjusted for diagnosis year, age at diagnosis, race, sex, and CCI score.

d Adjusted for diagnosis year, age at diagnosis, race, sex, BMI at baseline, and CCI score.

e Adjusted for diagnosis year, age at diagnosis, race, sex, BMI at baseline, cancer stage at diagnosis, and CCI score.

f Adjusted for diagnosis year, age at diagnosis, race, sex, and BMI at baseline.

**Supplemental Table 3. Risk factors for CVD subgroup, >10 years after cancer diagnosis among thyroid cancer survivors (n=1,333)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Cardiovascular disease subgroup** | | | | | | | | | | | | | | |
|  | **Hypertension**  **(n=367)** | | | **Heart disease**  **(n=285)** | | | **Cerebrovascular disease**  **(n=45)** | | | **Diseases of arteries/arterioles/**  **capillaries**  **(n=166)** | | | **Diseases of veins/lymphatics**  **(n=173)** | | |
|  | HR | 95% CI | | HR | 95% CI | | HR | 95% CI | | HR | 95% CI | | HR | 95% CI | |
| **Diagnosis year a** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1997-1999 | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 2000-2004 | 1.00\* | [0.80, | 1.26] | **0.74**\* | **[0.58,** | **0.95]** | 0.68\* | [0.37, | 1.28] | 0.94\* | [0.68, | 1.32] | 0.74\* | [0.54, | 1.02] |
| 2005-2009 | **0.31**\* | **[0.17,** | **0.57]** | **0.24**\* | **[0.11,** | **0.53]** | 0.31\* | [0.04, | 2.43] | 0.35\* | [0.11, | 1.14] | 0.49\* | [0.21, | 1.17] |
| 2010-2012 | - | - | | - | - | | - | - | | - | - | | - | - | |
| **Age at diagnosis b** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| < 40 years | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 40-65 years | **1.86**\* | **[1.43,** | **2.43]** | **1.38**\* | **[1.03,** | **1.85]** | **2.74**\* | **[1.11,** | **6.76]** | 1.17\* | [0.81, | 1.70] | **1.48**\* | **[1.02,** | **2.15]** |
| 65+ years | **3.00**\* | **[2.17,** | **4.16]** | **2.65**\* | **[1.87,** | **3.75]** | **4.03**\* | **[1.47,** | **11.06]** | **1.88**\* | **[1.19,** | **2.97]** | **1.78**\* | **[1.11,** | **2.86]** |
| **Sex** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Female | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Male | **1.35** | **[1.06,** | **1.72]** | **1.47** | **[1.13,** | **1.91]** | 1.28 | [0.65, | 2.52] | **1.72** | **[1.23,** | **2.40]** | 1.04 | [0.72, | 1.51] |
| **BMI at baseline c** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <18 kg/m2 | 0.28 | [0.04, | 2.02] | 1.71 | [0.62, | 4.72] | - | - | | 0.57 | [0.08, | 4.19] | - | - | |
| 18-24.9 kg/m2 | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 25-29.9 kg/m2 | 1.19 | [0.93, | 1.52] | 1.16 | [0.88, | 1.52] | 0.73 | [0.34, | 1.56] | 0.96 | [0.66, | 1.39] | 1.22 | [0.86, | 1.74] |
| 30+ kg/m2 | **1.54** | **[1.18,** | **2.01]** | 1.24 | [0.91, | 1.70] | 1.55 | [0.78, | 3.09] | 1.32 | [0.89, | 1.95] | 1.37 | [0.93, | 2.03] |
| **Cancer stage at diagnosis d** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Localized | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Regional | 1.09 | [0.84, | 1.41] | 1.19 | [0.90, | 1.58] | 1.57 | [0.79, | 3.09] | 1.14 | [0.79, | 1.65] | 0.92 | [0.62, | 1.37] |
| Distant | 1.33 | [0.66, | 2.71] | 1.75 | [0.82, | 3.76] | - | - | | 0.93 | [0.23, | 3.80] | 0.35 | [0.05, | 2.52] |
| **Treatment e** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Surgery only | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| Surgery & Radiation | **1.24** | **[1.00,** | **1.55]** | 0.96 | [0.75, | 1.23] | 1.02 | [0.55, | 1.88] | 1.17 | [0.85, | 1.61] | 0.84 | [0.61, | 1.16] |
| Other | 0.45 | [0.11, | 1.90] | 0.25 | [0.03, | 1.83] | - | - | | - | - | | 0.68 | [0.09, | 5.01] |
| **TSH suppression therapy e** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| No |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Yes | 1.05 | [0.73, | 1.51] | 1.20 | [0.79, | 1.82] | **2.28** | **[1.01,** | **5.17]** | 1.20 | [0.70, | 2.06] | 0.81 | [0.45, | 1.47] |
| **CCI score at baseline f** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 | Reference | | | Reference | | | Reference | | | Reference | | | Reference | | |
| 1+ | **4.59**\* | **[3.27,** | **6.45]** | **3.13**\* | **[2.22,** | **4.40]** | **8.35**\* | **[1.96,** | **35.65]** | **4.73**\* | **[2.83,** | **7.91]** | **5.87**\* | **[3.39,** | **10.17]** |

\* For the models that violated proportional hazards assumptions, we used flexible cubic spline models

a Adjusted for age at diagnosis, BMI at baseline, and CCI score.

b Adjusted for diagnosis year, race, sex, BMI at baseline, and CCI score.

c Adjusted for diagnosis year, age at diagnosis, race, sex, and CCI score.

d Adjusted for diagnosis year, age at diagnosis, race, sex, BMI at baseline, and CCI score.

e Adjusted for diagnosis year, age at diagnosis, race, sex, BMI at baseline, cancer stage at diagnosis, and CCI score.

f Adjusted for diagnosis year, age at diagnosis, race, sex, and BMI at baseline.