**Supplementary table 2.** Univariate and multivariate analyses for risk factors of VHL-related survival

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| --- | --- | --- | --- |
| **Variables** | **Univariate analyses** |  | **Multivariate analyses** |
| **HR** | **95% CI** | **P value** | **HR** | **95% CI** | **P value** |
| **Onset age**(≤30y vs. >30y) | 2.952 | 1.735-5.023 | **<0.001** |  | 2.410 | 1.291-4.501 | **0.006** |
| **Sex**(male vs. female) | 1.414 | 0.865-2.310 | 0.167 |  | 1.443 | 0.863-2.413 | 0.162 |
| **Birth year** | 1.012 | 0.988-1.037 | 0.337 |  | 0.995 | 0.969-1.021 | 0.693 |
| **Birth order**(first vs. others) | 0.912 | 0.538-1.547 | 0.743 |  | 0.797 | 0.466-1.365 | 0.409 |
| **Family history**(yes vs. no) | 2.081 | 1.075-4.026 | **0.030** |  | 2.396 | 1.209-4.748 | **0.012** |
| **Mutation**(missense vs. truncating) | 0.628 | 0.381-1.034 | 0.067 |  | 0.606 | 0.362-1.015 | 0.057 |
| **First symptom**(HB vs. abdomen) | 2.034 | 1.142-3.621 | **0.016** |  | 1.573 | 0.811-3.049 | 0.180 |