**Appendix 2.** Bivariate logistic regression assessing risk factors for 90-days symptomatic VTE event (n = 637)

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| --- | --- | --- | --- |
| Explanatory variable | Odds ratio (IQR) | Standard error | p value |
| Age (years) | 1.00 (0.98-1.02) | 0.01 | 0.957 |
| Modified Charlson Comorbidity Index\*  | 1.06 (0.92-1.23) | 0.08 | 0.386 |
| Total estimated blood loss during surgery (liters)† | 1.04 (0.90-1.19) | 0.07 | 0.609 |
| Duration surgery (hours)† | 1.17 (1.07-1.28) | 0.05 | **0.001** |
| Duration primary diagnosis till metastatic operation (days) | 1.00 (1.00-1.00) | 0.00 | 0.700 |
| Duration hospitalization (days) | 1.02 (0.99-1.04) | 0.14 | 0.264 |
| Total perioperative transfused\* | 0.99 (0.94-1.06) | 0.03 | 0.984 |
| Preoperative hemoglobin levels (g/dL)† | 1.02 (0.89-1.18) | 0.07 | 0.743 |
| Preoperative white blood cell count (103/μL)† | 1.03 (1.00-1.07) | 0.02 | 0.064 |
| Preoperative creatinine levels (mg/dL)† | 1.09 (0.75-1.58) | 0.21 | 0.650 |
| Preoperative calcium levels (mg/dL)† | 0.93 (0.72-1.20) | 0.12 | 0.596 |
| Preoperative platelet count (103/mm3)† | 1.00 (1.00-1.00) | 0.00 | 0.632 |
| Male | 0.88 (0.54-1.45) | 0.22 | 0.624 |
| Body mass index (in kg/m2)† < 18.5 18.5 - 30 > 30 | 1.65 (0.46-5.94)Reference value1.72 (0.98-3.02) | 1.080.49 | 0.4370.058 |
| Origin of primary tumor§ Lung cancer Breast cancer Multiple myeloma Kidney cancer | 1.25 (0.68-2.31)0.91 (0.42-1.99)0.84 (0.37-1.92)1.46 (0.75-2.86) | 0.390.360.350.50 | 0.4660.8200.6840.266 |
| Smoking status† Never smoked Former smoker Current smoker | Reference value1.06 (0.61-1.83)0.97 (0.47-2.01) | 0.300.360.27 | 0.8310.9360.825 |
| Additional comorbidities\* | 1.06 (0.65-1.73) | 0.27 | 0.825 |
| ASIA impairment scale (preoperative) Neurological deficit (A. D. C. or D) No neurological deficit (E) | 1.21 (0.74-1.97)Reference value | 0.30 | 0.456 |
| ECOG performance status† Score 0 to 2 (≤50% of waking hours bed or chair bound) Score 3 to 4 (>50% of waking hours bed or chair bound) | Reference value1.60 (0.80-3.20) | 0.57 | 0.180 |
| Time between start of neurological symptoms and surgery No neurological symptoms <14 days ≥14 days | Reference value1.16 (0.66-2.04)0.93 (0.48-1.81) | 0.330.32 | 0.6010.831 |
| Number of spine levels undergoing operation 1 2 3 or more | Reference value1.00 (0.51-1.96)1.31 (0.72-2.38) | 0.340.40 | 0.9910.383 |
| Number of spine metastases 1 2 3 or more | 1.25 (0.72-2.16)0.90 (0.42-1.92)Reference value | 0.350.35 | 0.4270.774 |
| Pathologic fracture | 1.40 (0.83-2.36) | 0.37 | 0.208 |
| Metastases region Thoracic Lumbar Cervical Combined | Reference value0.82 (0.44-1.52)0.34 (0.12-0.96)1.25 (0.50-3.15) | 0.260.180.57 | 0.530**0.042**0.631 |
| IVC filter prophylaxis | 0.90 (0.12-6.98) | 0.94 | 0.923 |
| Previous local radiotherapy | 0.82 (0.36-1.88) | 0.35 | 0.633 |
| Previous systemic therapy | 0.84 (0.45-1.57) | 0.27 | 0.589 |
| Multiple bone metastases¶ | 0.87 (0.53-1.42) | 0.22 | 0.581 |
| Visceral metastases | 1.17 (0.70-1.95) | 0.31 | 0.547 |
| Prior embolization | 1.58 (0.91-2.73) | 0.44 | 0.103 |
| IVC filter prophylaxis | 1.68 (0.72-3.95) | 0.73 | 0.232 |
| Previous local radiotherapy | 1.34 (0.81-2.22) | 0.34 | 0.251 |
| Previous systemic therapy | 0.78 (0.48-1.28) | 0.20 | 0.323 |
| Year of surgery | 0.97 (0.91 – 1.04) | 0.04 | 0.439 |
| Type of surgery Vertebrectomy or corpectomy with stabilization Decompression and stabilization Decompression  Stabilization | Reference value0.83 (0.49-1.41)0.52 (0.21-1.28)0.37 (0.05-2.87) | 0.230.240.39 | 0.4900.1550.343 |
| Surgical approach Posterior Anterior Combined | Reference value0.94 (0.41-2.14)1.32 (0.44-3.92) | 0.400.73 | 0.8780.621 |
| Anticoagulant None Low molecular weight heparin Subcutaneous heparin Aspirin Warfarin | Reference value0.82 (0.43-1.55)1.12 (0.59-2.14)0.90 (0.35-2.26)1.83 (0.58-5.79) | 0.270.370.421.08 | 0.5370.7330.8170.306 |

Bold indicates significance (p value less than 0.05).

\*These values were based on any additional comorbidity on top of the metastatic disease score according to the modified Charlson Comorbidity Index; †estimated blood loss was available in 499 patients (88%) from the no VTE group and in 67 patients (93%) from the VTE group, duration of surgery in 501 patients (89%) from the no VTE group and in 65 patients (90%) from the VTE group, preoperative hemoglobin level in 555 patients (98%) from the no VTE group, preoperative white blood cell count in 554 patients (98%) from the no VTE group, preoperative creatinine levels in 546 patients (97%) from the no VTE group and in 70 patients (97%) from the VTE group, preoperative calcium level in 513 patients (91%) from the no VTE group and in 70 patients (97%) from the VTE group, preoperative platelet count in 553 patients (98%) from the no VTE group, body mass index in 483 patients (85%) from the no VTE group and in 65 patients (90%) from the VTE group, smoking status in 545 patients (96%) from the no VTE group and in 71 patients (99%) from the VTE group, and ECOG in 386 patients (68%) from the no VTE group and in 45 patients (63%) from the VTE group;‡total perioperative transfused includes blood and non-blood products; §origins of primary tumor types are included into bivariate logistic regression if they have an number of >5 VTE patients; ¶any bone metastasis outside of the lesion treated for; VTE = venous thromboembolism; CI = confidence interval; ASIA = American Spinal Injury Association; ECOG = Eastern Cooperative Oncology Group; IVC = inferior vena cava.