**Supplementary Table 1: The baseline data of total patients.**

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| --- | --- | --- |
| **Variables** | **Training set and Testing set**  ***n* = 454** | **Validation set**  ***n* = 204** |
| Age (years) | 65 (58–74) | 66 (57–75) |
| Male | 241 (53.1%) | 107 (52.5%) |
| Confirmed diagnosis of APE | 113 (24.9%) | 59 (28.9%) |
| Previous APE or DVT | 40 (8.8%) | 20 (9.8%) |
| Surgery or fracture within the past month | 56 (12.3%) | 38 (18.6%) |
| Tachycardia | 74 (16.3%) | 30 (14.7%) |
| Chronic heart failure | 101 (22.2%) | 48 (23.5%) |
| Active malignancy | 89 (19.6%) | 35 (17.2%) |
| Chest pain | 101 (22.2%) | 46 (22.5%) |
| Dyspnea | 324 (71.4%) | 159 (77.9%) |
| Hemoptysis | 81 (17.8%) | 26 (12.7%) |
| Syncope | 27 (5.9%) | 15 (7.4%) |
| Unconsciousness | 39 (8.6%) | 28 (13.7%) |
| Chest tightness | 121 (26.7%) | 78 (38.2%) |
| Fever | 148 (32.6%) | 71 (34.8%) |
| Lower limb pain | 24 (5.3%) | 10 (4.9%) |
| Lower limb weakness | 48 (10.6%) | 29 (14.2%) |
| Lower limb edema | 122 (26.9%) | 46 (22.5%) |
| Hemodynamic stability | 436 (96.0%) | 196 (96.1%) |
| Systolic pressure(mmHg) | 125 (112–141) | 126 (112–141) |
| Diastolic pressure(mmHg) | 76 (66–83) | 75 (66–86) |
| Heart rates (bpm) | 80 (75–92) | 82 (78–96) |
| D-dimer (mg/L) | 1.52 (0.47–4.47) | 1.85 (0.74–5.40) |
| CK-MB (ng/mL) | 1.37 (0.88–2.04) | 1.42 (0.93–2.55) |
| cTnT (ng/ml) | 0.013 (0.009–0.024) | 0.010 (0.010–0.030) |
| NT pro-BNP (pg/mL) | 218 (76–912) | 232 (76–1127) |
| Arterial oxygen saturation (%) | 95.0 (93.0–97.0) | 95.0 (92.5–97.0) |
| Oxygenation index | 320 (255–369) | 319 (234–385) |

Data are presented as median with interquartile range, or *n* (%). APE: Acute pulmonary embolism; CK-MB: Creatine kinase-MB; cTnT: Cardiac troponin T; DVT: Deep venous thrombosis; NT pro-BNP: N-terminal pro-B-type natriuretic peptide.

**Supplementary Table 2: The basal characteristics of the training dataset and testing dataset.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Training**  **(*n* = 340)** | **Testing**  **(*n* = 114)** | ***U/****χ*2 | ***P*-value** |
| Age (years) | 65 (57–74) | 66 (59–73) | 19002.500‡ | 0.755 |
| Male | 187 (55.0%) | 54 (47.4%) | 1.997† | 0.158 |
| Previous APE or DVT | 31 (9.1%) | 9 (7.9%) | 0.159† | 0.690 |
| Tachycardia | 55 (16.2%) | 19 (16.7%) | 0.015† | 0.902 |
| Surgery or fracture within the past month | 45 (13.2%) | 11 (9.6%) | 1.015† | 0.314 |
| Chronic heart failure | 79 (23.2%) | 22 (19.3%) | 0.765† | 0.382 |
| Active malignancy | 66 (19.4%) | 23 (20.2%) | 0.032† | 0.859 |
| Chest pain | 79 (23.2%) | 22 (19.3%) | 0.765† | 0.382 |
| Dyspnea | 250 (73.5%) | 74 (64.9%) | 3.102† | 0.078 |
| Hemoptysis | 63 (18.5%) | 18 (15.8%) | 0.437† | 0.508 |
| Syncope | 20 (5.9%) | 7 (6.1%) | 0.010† | 0.920 |
| Unconsciousness | 26 (7.6%) | 13 (11.4%) | 1.534† | 0.215 |
| Chest tightness | 101 (29.7%) | 20 (17.5%) | 6.460† | 0.011 |
| Fever | 106 (31.2%) | 42(36.8%） | 1.247† | 0.264 |
| Lower limb pain | 17 (5.0%) | 7 (6.1%) | 0.222† | 0.638 |
| Lower limb weakness | 35 (10.3%) | 13 (11.4%) | 0.111† | 0.739 |
| Lower limb edema | 95 (27.9%) | 27 (23.7%) | 0.787† | 0.375 |
| Hemodynamic stability | 326 (95.9%) | 110 (96.5%) |  | 1.000\* |
| Systolic pressure(mmHg) | 126 (112–143) | 123 (114–136) | 20153.500‡ | 0.523 |
| Diastolic pressure(mmHg) | 76 (67–84) | 75 (66–81) | 21609.000‡ | 0.066 |
| Heart rates (bpm) | 80 (74–92) | 82 (75–92) | 19069.000‡ | 0.797 |
| D-dimer (mg/L) | 1.48 (0.45–4.34) | 1.79 (0.59–4.98) | 17541.500‡ | 0.129 |
| CK-MB (ng/mL) | 1.37 (0.90–2.00) | 1.44 (0.83–2.33) | 18666.500‡ | 0.556 |
| cTnT (ng/ml) | 0.013  (0.009–0.023) | 0.014  (0.009–0.028) | 17629.000‡ | 0.148 |
| NT pro-BNP (pg/mL) | 193 (70–844) | 286 (114–978) | 17245.500‡ | 0.078 |
| Arterial oxygen saturation (%) | 95.1 (93.0–97.0) | 95.0 (93.0–97.0) | 20455.000‡ | 0.375 |
| Oxygenation index | 323 (257–378) | 307 (238–361) | 21175.000‡ | 0.139 |

Data are presented as median with interquartile range or *n* (%). ‡ *U* value; †*χ*2 value; \*The statistic is the 2-tailed Fisher’s exact test. APE: Acute pulmonary embolism; CK-MB: Creatine kinase-MB; cTnT: Cardiac troponin T; DVT: Deep venous thrombosis; NT pro-BNP: N-terminal pro-B-type natriuretic peptide.