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**Table S1. Scores for the POD prediction rule**

|  |  |  |
| --- | --- | --- |
| **Variables** | **Regression Coefficient** | **Score** |
| **Age > 65 years** | 1.205 | 1 |
| **Education level < 9 years** | 0.927 | 1 |
| **History of smoking** | 0.949 | 1 |
| **History of diabetes** | 0.933 | 1 |
| **Supra-tentorial lesions** | 1.231 | 1 |
| **Anaesthesia duration > 360 min** | 0.522 | 0.5 |
| **GCS <9 at ICU admission** | 1.802 | 1.5 |
| **Metabolic acidosis** | 2.632 | 2.5 |
| **Positioning of neurosurgical drainage tube** | 0.654 | 0.5 |

**Table S2. Percentages of POD according to the score**

|  |  |  |  |
| --- | --- | --- | --- |
| **Score** | **Delirium (%)** | **No Delirium (%)** | **Total** |
| **0** | 0 (0) | 105 (100) | 105 |
| **0.5** | 1 (1.43) | 69 (98.6) | 70 |
| **1** | 2 (1.90) | 103 (98.10) | 105 |
| **1.5** | 10 (7.87) | 117 (92.13) | 127 |
| **2** | 15 (15.63) | 81 (84.37) | 96 |
| **2.5** | 17 (25) | 51 (75) | 68 |
| **3** | 26 (30.95) | 58 (69.05) | 84 |
| **3.5** | 13 (38.24) | 21 (61.76) | 34 |
| **4** | 11 (36.67) | 19 (63.33) | 30 |
| **4.5** | 15 (60) | 10 (40) | 25 |
| **5** | 12 (70.59) | 5 (29.41) | 17 |
| **5.5** | 12 (75) | 4 (25) | 16 |
| **6** | 11 (100) | 0 (0) | 11 |
| **6.5** | 5 (100) | 0 (0) | 5 |
| **7** | 5 (100) | 0 (0) | 5 |
| **8** | 1 (100) | 0 (0) | 1 |
| **9.5** | 1 (100) | 0 (0) | 1 |

**Table S3.** **Performance of E-PREPOD-NS score at various cutoff values to predict POD**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cutoff point** | **SE**  **(%)** | **SP**  **(%)** | **PPV**  **(%)** | **NPV**  **(%)** | **LR+** | **LR-** |
| **Training cohort** | |  |  |  |  |  |
| **≥0** | 100.00 | 0.00 | 19.6 | ∞ | 1.00 | ∞ |
| **>0** | 100.00 | 17.42 | 22.8 | 100.0 | 1.21 | 0.00 |
| **>0.5** | 99.36 | 29.24 | 25.5 | 99.5 | 1.40 | 0.022 |
| **>1** | 96.82 | 45.10 | 30.1 | 98.3 | 1.76 | 0.071 |
| **>1.5** | 87.90 | 62.99 | 36.7 | 95.5 | 2.37 | 0.19 |
| **>2** | 79.62 | 77.29 | 46.1 | 94.0 | 3.51 | 0.26 |
| **>2.5** | 70.70 | 85.07 | 53.6 | 92.2 | 4.74 | 0.34 |
| **>3** | 52.23 | 92.38 | 62.6 | 88.8 | 6.85 | 0.52 |
| **>3.5** | 42.04 | 95.18 | 68.0 | 87.1 | 8.72 | 0.61 |
| **>4** | 34.39 | 97.51 | 77.1 | 85.9 | 13.82 | 0.67 |
| **>4.5** | 23.57 | 99.38 | 90.2 | 84.2 | 37.88 | 0.77 |
| **>5** | 16.56 | 99.84 | 96.3 | 83.1 | 106.48 | 0.84 |
| **>5.5** | 12.10 | 100.00 | 100.0 | 82.3 | ∞ | 0.88 |
| **>9.5** | 0.00 | 100.00 | ∞ | 80.4 | ∞ | 1.00 |
| **Internal validation cohort (200 cases)** | | | |  |  |  |
| **≥0** | 100.00 | 0.00 | 26.0 | ∞ | 1.00 | ∞ |
| **>0** | 100.00 | 18.24 | 30.1 | 100.0 | 1.22 | 0.00 |
| **>0.5** | 98.08 | 28.38 | 32.5 | 97.7 | 1.37 | 0.068 |
| **>1** | 94.23 | 41.22 | 36.0 | 95.3 | 1.60 | 0.14 |
| **>1.5** | 86.54 | 60.81 | 43.7 | 92.8 | 2.21 | 0.22 |
| **>2** | 76.92 | 78.38 | 55.6 | 90.6 | 3.56 | 0.29 |
| **>2.5** | 67.31 | 87.16 | 64.8 | 88.4 | 5.24 | 0.38 |
| **>3** | 53.85 | 93.92 | 75.7 | 85.3 | 8.85 | 0.49 |
| **>3.5** | 40.38 | 95.95 | 77.8 | 82.1 | 9.96 | 0.62 |
| **>4** | 25.00 | 97.30 | 76.5 | 78.7 | 9.25 | 0.77 |
| **>4.5** | 23.08 | 98.65 | 85.7 | 78.5 | 17.08 | 0.78 |
| **>5** | 17.31 | 100.00 | 100.0 | 77.5 | ∞ | 0.83 |
| **>9.5** | 0.00 | 100.00 | ∞ | 74.0 | ∞ | 1.00 |

SE: sensitivity, SP: specificity, PPV: positive predictive value, NPV: negative predictive value, LR+: positive likelihood ratio, LR-: negative likelihood ratio.