**Table 1. Sociodemographic prevalence, comorbidities, and signs and symptoms of severe and non-severe dengue cases.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Exposure variables** | **Severe**  **n (%)** | **Non-severe**  **n (%)** | **Totals**  **n (%)** | **p-value** |
| **Socio-demographic** |  |  |  |  |
| **Age** |  |  |  |  |
| ≤ 29 years | 60 (43.48) | 150 (58.37) | 210 (53.16) | **0.005** |
| > 29 years | 78 (56.52) | 107 (41.63) | 185 (46.84) |  |
| **Gender** |  |  |  |  |
| Male | 75 (51.72) | 190 (65.5) | 265 (60.92) | **0.006** |
| Female | 70 (48.28) | 100 (34.5) | 170 (39.08) |  |
| **Marital Status** |  |  |  |  |
| Married | 85 (59.44) | 120 (41.81) | 205 (47.67) | **<0.001** |
| Unmarried | 58 (40.56) | 167 (58 .19) | 225 (52.33) |  |
| **Education level** |  |  |  |  |
| 12 years or above | 7 (4.96) | 7 (2.46) | 14 (3.29) | 0.316 |
| 10 years | 27 (19.15) | 50 (17.61) | 77 (18.12) |  |
| 5 years | 58 (41.13) | 107 (37.68) | 165 (38.82) |  |
| No education | 49 (34.75) | 120 (42.25) | 169 (39.76) |  |
| **Monthly Income** |  |  |  |  |
| Low | 78 (56.52) | 140 (48.95) | 218 (51.42) | **0.143** |
| Medium | 27 (19.57) | 81 (28.32) | 108 (25.47) |  |
| High | 33 (23.91) | 65 (22.73) | 98 (23.11) |  |
| **Comorbidities** |  |  |  |  |
| **Obesity** |  |  |  |  |
| Yes | 55 (37.93) | 107 (36.90) | 162 (37.24) | 0.833 |
| No | 90 (62.07) | 183 (63.10) | 273 (62.76) |  |
| **Diabetes** |  |  |  |  |
| Yes | 11 (7.59) | 14 (4.83) | 25 (94.25) | **0.044** |
| No | 134 (92.41) | 276 (95.17) | 410 (5.75) |  |
| **Hypertension** |  |  |  |  |
| Yes | 19 (13.10) | 28 (9.66) | 47 (10.80) | 0.275 |
| No | 126 (86.90) | 262 (90.34) | 388 (89.20) |  |
| **Chronic Pulmonary Disease** |  |  |  |  |
| Yes | 23 (15.86) | 23 (7.93) | 46 (10.57) | **0.011** |
| No | 122 (84.14) | 267 (92.07) | 389 (89.43) |  |
| **Ischemic Heart Disease** |  |  |  |  |
| Yes | 14 (9.66) | 18 (6.21) | 32 (7.36) | **0.197** |
| No | 131 (90.34) | 272 (93.79) | 403 (92.64) |  |
| **Signs and symptoms** |  |  |  |  |
| **Abdominal Pain** |  |  |  |  |
| Yes | 84 (58.3) | 107 (36.9) | 191 (44.01) | **<0.001** |
| No | 60 (41.7) | 183 (63.1) | 243 (55.99) |  |
| **Diarrhea** |  |  |  |  |
| Yes | 33 (22.8) | 61 (21.03) | 94 (21.61) | **<0.001** |
| No | 112 (77.2) | 229 (78.97) | 341 (78.39) |  |
| **Vomiting** |  |  |  |  |
| Yes | 14 (9.66) | 22 (7.58) | 36 (8.28) | **0.004** |
| No | 131 (90.34) | 268 (92.41) | 399 (91.72) |  |
| **Lethargy** |  |  |  |  |
| Yes | 28 (19.44) | 21 (7.27) | 49 (11.32) | **<0.001** |
| No | 116 (80.56) | 268 (92.73) | 384 (88.68) |  |
| **Headache** |  |  |  |  |
| Yes | 110 (76.39) | 225 (77.59) | 335 (77.19) | 0.742 |
| No | 34 (23.61) | 65 (22.41) | 99 (22.81) |  |
| **Rash** |  |  |  |  |
| Yes | 103 (71.53) | 203 (70.00) | 306 (70.51) | 0.461 |
| No | 41 (28.47) | 87 (30.00) | 128 (29.49) |  |
| **Chills and/or Rigors** |  |  |  |  |
| Yes | 39 (26.90) | 79 (27.24) | 118 (27.13) | 0.939 |
| No | 106 (73.10) | 211 (72.75) | 317 (72.87) |  |
| **Nausea** |  |  |  |  |
| Yes | 27 (18.62) | 29 (10.00) | 56 (12.87) | **0.011** |
| No | 118 (81.38) | 261 (90.00) | 379 (87.13) |  |
| **Hemorrhage** |  |  |  |  |
| Yes | 108 (75.0) | 207 (71.38) | 412 (95.37) | 0.854 |
| No | 36 (25.0) | 83 (28.62) | 20 (4.63) |  |
| **Musculoskeletal Pain** |  |  |  |  |
| Yes | 108 (75.0) | 207 (71.38) | 315 (72.58) | 0.426 |
| No | 36 (25.0) | 83 (28.62) | 119 (27.42) |  |
| **Total** | 145 (33.33) | 290 (66.67) | 435 (100.00) |  |

**Table 2. Comparison of clinical and laboratory results between severe and non-severe dengue cases.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Cases**  **Median (IQR)** | **Controls**  **Median (IQR)** | **Totals**  **Median (IQR)** | ***p*-value** |
| **Age (Years)** | 32 (22) | 25 (15) | 27 (19) | <0.001 |
| **WBCs (cells × 109 /L)** | 4.90 (2.37) | 5.51 (3.50) | 5.20 (3.12) | <0.001 |
| **Thrombocytes (cells × 109 /L)** | 85.54 (17.15) | 94.49 (15.72) | 91.55 (14.20) | <0.001 |
| **Hemoglobin (g/dL)** | 15.36 (5.27) | 15.19 (4.77) | 15.23 (4.78) | 0.264 |
| **Serum Creatinine (μmol/L)** | 132.11 (29.51) | 104.80 (14.54) | 111.01 (18.21) | <0.001 |
| **Total bilirubin (μmol/L)** | 10.34 (2.23) | 12.46 (2.36) | 11.80 (2.5) | <0.001 |
| **AST (IU/L)** | 171.13 (62.03) | 127.76 (48.65) | 142.53 (54.43) | <0.001 |
| **ALT (IU/L)** | 123.17 (25.39) | 114.32 (25.12) | 117.44 (25.03) | <0.001 |
| **Albumin (g/L)** | 39.78 (4.14) | 42.36 (2.73) | 41.72 (3.07) | <0.001 |
| **Globulin (g/L)** | 24.72 (4.96) | 27.53 (2.63) | 26.94 (3.05) | <0.001 |
| **Pulse rate (BPM)** | 89.68 (4.15) | 88.14 (4.56) | 88.58 (4.49) | <0.001 |
| **Temperature (◦C)** | 38.68 (1.52) | 37.99 (1.03) | 38.14 (1.19) | <0.001 |

**Table 3. Association between the signs and symptoms of severe and non-severe dengue cases, sociodemographics, and comorbidities.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Exposure variables** | **Univariate Model** | | **Multivariable**  **Model** | |
|  | **COR (95% CI)** | **P-value** | **AOR (95% CI)** | **P-value** |
| **Socio-demographic** |  |  |  |  |
| **Age** |  |  |  |  |
| > 29 years | 1.82 (1.20-2.78) | **0.005** | 1.34 (1.12-4.72) | **0.028** |
| ≤ 29 years | Reference |  | Reference |  |
| **Gender** |  |  |  |  |
| Female | 1.77 (1.18-2.66) | **0.006** | 1.70 (1.42-2.17) | 0.071 |
| Male | Reference |  | Reference |  |
| **Marital Status** |  |  |  |  |
| Married | 2.04 (1.36-3.08) | **<0.001** | 1.49 (1.10-3.14) | 0.296 |
| Unmarried | Reference |  | Reference |  |
| **Highest Education** |  |  |  |  |
| Higher Secondary or above | 2.45 (0.80-7.51) | **0.110** | 4.42 (0.93-8.22) | 0.086 |
| Secondary | 1.32 (0.74-2.34) | 0.340 | 1.92 (0.45-3.11) | 0.108 |
| Primary | 1.33 (0.84-2.11) | 0.228 | 1.56 (0.78-2.98) | 0.112 |
| No education | Reference |  | Reference |  |
| **Monthly Income** |  |  |  |  |
| Low | 1.10 (0.67-1.83) | 0.717 | 1.23 (0.66-2.32) | 0.523 |
| Medium | 0.66 (0.36-1.20) | **0.172** | 0.92 (0.46-1.87) | 0.824 |
| High | Reference |  | Reference |  |
| **Comorbidities** |  |  |  |  |
| **Obesity** |  |  |  |  |
| Yes | 1.05 (0.69-1.57) | 0.833 | 1.35 (0.79-2.26) | 0.232 |
| No | Reference |  |  |  |
| **Diabetics** |  |  |  |  |
| Yes | 1.62 (1.10-3.65) | **0.044** | 2.79 (1.84-3.15) | **0.034** |
| No | Reference |  |  |  |
| **Hypertension** |  |  |  |  |
| Yes | 1.41 (0.75-2.61) | 0.275 | 2.67 (1.23-5.63) | **0.037** |
| No | Reference |  |  |  |
| **Chronic Pulmonary Disease** |  |  |  |  |
| Yes | 2.19 (1.18-4.07) | **0.011** | 1.64 (0.47-3.98) | 0.632 |
| No | Reference |  |  |  |
| **Ischemic Heart Disease** |  |  |  |  |
| Yes | 1.61 (1.17-3.34) | 0.019 | 1.51 (0.71-3.18) | 0.279 |
| No | Reference |  |  |  |
| **Signs and Symptoms** |  |  |  |  |
| **Abdominal Pain** |  |  |  |  |
| Yes | 2.39 (1.60-3.61) | **<0.001** | 1.97 (1.15-2.85) | **<0.001** |
| No | Reference |  |  |  |
| **Diarrhea** |  |  |  |  |
| Yes | 1.41 (1.18-1.78) | **<0.001** | 0.97 (0.84-1.31) | 0.193 |
| No | Reference |  |  |  |
| **Vomiting** |  |  |  |  |
| Yes | 1.50 (1.23-2.60) | **0.004** | 1.68 (1.03-2.19) | **0.031** |
| No | Reference |  |  |  |
| **Lethargy** |  |  |  |  |
| Yes | 3.08 (1.69-5.71) | **<0.001** | 1.55 (1.01-2.22) | **0.022** |
| No | Reference |  |  |  |
| **Headache** |  |  |  |  |
| Yes | 1.93 (0.59-2.51) | 0.742 | 1.36 (1.14-2.65) | **<0.001** |
| No | Reference |  |  |  |
| **Rash** |  |  |  |  |
| Yes | 1.08 (0.70-1.68) | 0.461 | 1.68 (1.13-1.91) | **0.013** |
| No | Reference |  |  |  |
| **Chills and Rigors** |  |  |  |  |
| Yes | 0.98 (0.62-1.53) | 0.939 | 1.56 (0.67-1.98) | 0.113 |
| No | Reference |  |  |  |
| **Nausea** |  |  |  |  |
| Yes | 2.06 (1.16-3.64) | **0.011** | 1.68 (0.99-2.99) | 0.204 |
| No | Reference |  |  |  |
| **Hemorrhage** |  |  |  |  |
| Yes | 1.09 (0.40-2.73) | 0.854 | 1.58 (0.59-1.94) | 0.389 |
| No | Reference |  |  |  |
| **Musculoskeletal Pain** |  |  |  |  |
| Yes | 1.20 (0.77-1.91) | 0.426 | 1.13 (0.65-1.75) | 0.489 |
| No | Reference |  |  |  |

**Table 4. Association between clinical and laboratory results from severe and non-severe dengue cases.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Univariate Model** | | **Multivariable Model** | |
| **Variables** | **COR (95% CI)** | ***p*-value** | **AOR (95% CI)** | ***p*-value** |
| **Age (Years)** | 1.03 (1.01-1.04) | <0.001 | 1.02 (0.97-1.08) | 0.414 |
| **WBCs (cells × 109 /L)** | 0.80 (0.71-0.89) | <0.001 | 0.86 (0.56-1.29) | 0.485 |
| **Thrombocytes (cells × 109 /L)** | 0.89 (0.86-0.91) | <0.001 | 0.86 (0.75-0.95) | 0.007 |
| **Hemoglobin (g/dL)** | 1.04 (0.97-1.12) | 0.261 |  |  |
| **Serum Creatinine (μmol/L)** | 1.20 (1.16-1.25) | <0.001 | 1.25 (1.14-1.44) | <0.001 |
| **Total bilirubin (μmol/L)** | 0.39 (0.32-0.47) | <0.001 | 0.35 (0.18-0.58) | <0.001 |
| **AST (IU/L)** | 1.04 (1.03-1.05) | <0.001 | 1.02 (1.01-1.05) | 0.035 |
| **ALT (IU/L)** | 1.05 (1.03-1.06) | <0.001 | 1.09 (1.04-1.17) | 0.003 |
| **Albumin (g/L)** | 0.54 (0.47-0.61) | <0.001 | 0.53 (0.34-0.74) | 0.001 |
| **Globulin (g/L)** | 0.53 (0.46-0.60) | <0.001 | 0.56 (0.32-0.88) | 0.024 |
| **Pulse rate (BPM)** | 1.20 (1.11-1.30) | <0.001 | 1.05 (0.77-1.45) | 0.750 |
| **Temperature (◦C)** | 3.07 (2.27-4.22) | <0.001 | 4.45 (1.96-7.39) | 0.005 |

**Table 5. Assessment of the Final Model's Predictive Accuracy and Goodness of Fit**

|  |  |  |
| --- | --- | --- |
| **Hosmer and Lemeshow’s Goodness of Fit Test:** | | |
| **X-squared** | **Degrees of freedom** | ***P*-value** |
| 10.46 | 8 | 0.234 |
| **Area Under the Receiver Operating Characteristic Curve (AUROC):** | | |
| Value | 72.46% | |
|  | | |
| **Figure 1. Correlation matrix between various clinical and laboratory parameters of confirmed dengue cases** | | |

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| --- |
|  |
| **Figure 2. Area under the receiver operating characteristic curve (AUROC) of the final model** |