**Supplementary Material**

**Supplementary Table 1.** Receiver operating characteristic curve analysis results and predictive values of the evaluated indices for the differential diagnosis of S-hemoglobin variant cases (sickle cell disorder) and the control group

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **AUC (95%)** | **Cut-off** | **Sens.(%)** | **Spec..(%)** | **PPV(%)** | **NPV(%)** | **% correctly** **identified** **patients** | **YI** | **P****Value** |
| RDW (%) | 0.79(0.71-0.89) | **SC** >14% | 71% | 83% | 80% | 76% | 77% | 0.51 | <0.001 |
| RDW index | 0.71(0.61-0.81) |  **SC**>241 | 60% | 82% | 75% | 69% | 71% | 0.42 | <0.001 |
| Mentzer index | 0.61(0.49-0.72) |  **SC** >18 | 46% | 78% | 66% | 61% | 62% | 0.24 | 0.046 |
| GK | 0.62(0.50-0.73) |  **SC** >69 | 60% | 56% | 56% | 61% | 58% | 0.16 |  0.026  |
| EF | 0.60(0.48-0.71) |  **SC**>9 | 49% | 60% | 53% | 56% | 55% | 0.09 |  0.076 |
| SL | 0.81(0.73-0.89) |  **SC** <1700 | 62% | 90% | 85% | 72% | 77% | 0.52 | <0.001 |
| SI | 0.62(0.50-0.73) |  **SC** >5 | 69% | 75% | 72% | 73% | 72% | 0.44 |  0.023 |
| RI | 0.85(0.78-0.93) |  **SC**>2.8 | 71% | 86% | 83% | 76% | 79% | 0.57 | <0.001 |
| EI | 0.51(0.40-0.63) |  **SC** >20 | 85% | 22% | 50% | 61% | 52% | 0.07 | 0.779 |
| Sir I | 0.50(0.38-0.62) |  **SC**>35 | 56% | 37% | 45% | 48% | 46% | -0.07 | 0.998 |
| HH | 0.80(0.71-0.89) |  **SC** >21.5 | 71% | 83% | 80% | 76% | 77% | 0.54 | <0.001 |

AUC: Area under the curve; Sens: sensitivity; Spec: Specificity; PPV: positive-predictive value; NPV: Negative-predictive value; YI: Youden's index; RDW: red cell distribution width; RDWI: red cell distribution width index; GK: Green and King Index; EF: England and Fraser index; SL: Shine and lal index; SI: Srivasta Index; RI: Ricerca Index; EI: Ehsani Index; Sir I: Sirdah Index; HH: Huber-Herklotz-Index; SC: all sickle cell patients.