**Supplementary Material**

 **Table 2.** Receiver operating characteristic curve analysis results and predictive values of the evaluated indices for the differential diagnosis of SCD patients and SCT subjects

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **AUC (95%)** | **Cut-off** | **Sens. (%)** | **Spec. (%)** | **PPV (%)** | **NPV (%)** | **% correctly** **identified** **patients** | **YI** | **P****Value** |
| RBCs (x 106/L) | 0.66(0.50-0.81) |  SCD <5 SCT >5 | 45% | 88% | 82% | 55% | 64% | 0.33 | 0.050 |
| Hb (g/dL) | 0.78(0.65-0.90) |  SCD <11 SCT >11 | 68% | 83% | 84% | 66% | 74% | 0.51 | <0.001 |
| MCHC | 0.78(0.66-0.91) |  SCD <32 SCT >32 | 77% | 79% | 82% | 73% | 87% | 0.56 | <0.001 |
| Hct (%) | 0.82(0.69-94) |  SCD <33% SCT >33% | 77% | 100% | 100% | 77% | 87% | 0.77 | <0.001 |
| Retics (%) | 0.66(0.50-0.81) |  SCD >3% SCT <3% | 67% | 58% | 67% | 58% | 64% | 0.25 |  0.045  |
| Hb-A (%) | 0.98(0.94-1.09) |  SCD <10% SCT >50% | 97% | 83% | 88% |  95% | 91% | 0.79 | <0.001 |
| Hb-A2 (%) | 0.72(0.57-0.88) |  SCD <3.0% SCT >3.0% | 87% | 54% | 71% | 76% | 72% | 0.41 | 0.004 |
| Hb-F (%) | 0.80(0.74-0.95) |  SCD >2.5% SCT <2.5% | 90% | 75% | 77% | 86% | 69% | 0.65 | <0.001 |
| Hb-S (%) | 0.98(0.94-1.02) |  SCD >38% SCT <38% | 90% | 100% | 100% | 89% | 95% | 0.90 | <0.001 |
| RDW (%) | 0.67(0.52-0.82) |  SCD >18% SCT< 18% | 75% | 58% | 58% | 75% | 66% | 0.33 |  0.030 |
| RDW index | 0.66(0.51-0.81) |  SCD >295 SCT <295 | 67% | 71% | 59% | 73% | 69% | 0.38 |  0.040  |
| Mentzer index | 0.63(0.48-0.79) |  SCD >18% SCT< 18% | 58% | 71% | 61% | 69% | 66% | 0.29 |  0.087  |
| GK | 0.71(0.56-0.85) |  SCD >71 SCT <71 | 83% | 61% | 63% | 83% | 71% | 0.44 |  0.009  |
| EF | 0.71(0.56-0.85) |  SCD >10 SCT <10 | 75% | 70% | 64% | 7\*% | 71% | 0.45 |  0.008 |
| SL | 0.52(0.37-0.68) |  SCD >1650 SCT <1650 | 50% | 45% | 41% | 54% | 47% | -0.05 | 0.773 |
| SI | 0.69(0.53-0.84) |  SCD >6 SCT <6 | 67% | 71% | 64% | 73% | 69% | 0.38 |  0.018 |
| RI | 0.69(0.55-0.83) |  SCD >5 SCT <5 | 50% | 77% | 63% | 66% | 65% | 0.27 | 0.018 |
| EI | 0.61(0.46-0.77) |  SCD >36 SCT <36 | 58% | 77% | 67% | 70% | 69% | 0.35 |  0.164 |
| Sir I | 0.69(0.54-0.83) |  SCD >42 SCT <42 | 67% | 74% | 67% | 74% | 71% | 0.41 |  0.018 |
| HH | 0.74(0.60-0.87) |  SCD >33 SCT< 33 | 54% | 77% | 65% | 68% | 67% | 0.31 | 0.003 |

AUC: Area under the curve; Sens: sensitivity; Spec: Specificity; PPV: positive-predictive value; NPV: Negative-predictive value ; YI: Youden's index; SC: all sickle cell patients; SCD: sickle cell disease; SCT: sickle cell trait; RBCs: red blood cell; Hb: hemoglobin; MCHC: mean corpuscular hemoglobin concentration; Hct: hematocrit; RDW: red cell distribution width; RDWI: red cell distribution width index; GK: Green and King Index; EF: England and Frazer index; SL: Shine and lal index; SI: Srivasta Index; RI: Ricerca Index; EI: Ehsani Index; Sir I: Sirdah Index; HH: Huber-Herklotz-Index.