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COMPUTERIZED NEUROCOGNITIVE TESTING IN ADULT SICKLE CELL PATIENTS

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Sickle cell disease (SCD) is a genetic disorder with multiple medical manifestations. The vasoocclusion causes pain crisis as well as higher incidence of cerebrovascular events (CVEs). At least 20% of SCD patients with no history of strokes have abnormal brain MRI. There is limited literature addressing neurocognitive deficits in the adult SCD population. In the current study, 30 subjects (17 males, 13 females) of African American descent were administered a computer-based software program, the CNS Vital Signs (CNS-VS) with measures for memory, psychomotor speed, reaction time, cognitive flexibility and complex attention, as well as a global neurocognitive index. Mean age for control 43.54 yrs \pm 4.24; SCD group 34 \pm 12. A significant difference was found between SCD patients and controls for Symbol Digit Coding domain ($p=0.001$) and psychomotor domain ($p=0.02$) between groups. The relevance of these results point to diffuse brain damage involvement in SCD population even in the absence of CVEs as Symbol Digit Coding is the most sensitive test of brain damage. Using a computerized program to assess neurocognitive presentation in neurologically intact SCD population can be a promising cost-effective method of assessment relevant for treatment. Implementing routine neurocognitive screening in this underserved population may promote access to needed care and increased quality of life.

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