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## Role of Protein C and S in Neurological Disorders in Children with Sickle Cell Disease

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**Background:** Patients with sickle cell disease (SCD) have a hypercoagulable state with increased risk of various neurological complications including: headache, cognitive difficulties, seizures, visual loss, ischemic and hemorrhagic stroke, transient ischemic attacks, altered mental status and covert or silent infarction. The purpose of this study is to assess neurological disorders in pediatric patients with SCD using multimodal approach through clinical, laboratory, neuroimaging and neurophysiological studies and detect their relation to protein C and protein S

**Methodology:** This study was conducted on 50 children with SCD and 25 healthy children matched age and sex in Department of Pediatric (Hematology Unit) and Department of Neurology, Tanta University Hospital, Egypt, between April 2016 and April 2018. All subjects were subjected to full history taking, neurologic examination using pediatric neurological sheet, laboratory investigations (including protein C , protein S), neuroimaging including: CT and/or MRI, MRA and/or CT angiography, also MRV, EEG and Stanford-Binet Intelligence scales-Fifth Edition.

**Results:** SCD patients showed many abnormalities on neurological examination and on different modalities of MR imaging on the brain with positive relation with many risk factors including decreased level of protein C and S. Prophylactic blood transfusion in SCD patients with abnormal TCD had a role in reducing the incidence of stroke.

**Conclusion:** There was variation in neurological presentation, examination and brain imaging in cases with SCD. There was positive relation between decreased level of protein C and S in SCD cases and increased risk for ischemic and hemorrhagic stroke. There was positive relation between regular blood transfusion in SCD patients and decreased risk for ischemic stroke.

### Biography

Marwa Yassien Badr has completed her PhD at the age of 35 years from Tanta University (december 2020). She is assistant lecturer of neurology, Tanta University, Egypt, waiting for a promotion of a lecturer. Headache specialist in Psychiatry, Neurology and Neurosurgery Center in Tanta. M.Sc. Neuropsychiatry in 2014 (spontaneous SAH), PHD in neurology in 2020 (pediatric SCD and neurology). Skilled in general neurology examination and care, EEG interpretation, duplex extra and intracranial with various applications and Botox injection in spasticity, dystonia and migraine. Member of Egyptian Society of Neurology, Psychiatry and Neurosurgery (ESNPN), MDS, HIS, AAN and WHS Egyptian Chapter Ambassador. She has published 6 papers in reputed journals and has just started as an editorial board member of London Journals press since 2 months.