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## Variations in transcranial Doppler findings in patients with sickle cell disease: Experience from the Arabian Peninsula

Akram Asbeutah<sup>1</sup>, Adekile A D<sup>1</sup>, Hassan M K<sup>2</sup>, Al-Hinai M<sup>3</sup>, Trad O<sup>4</sup> and Farhan N J<sup>5</sup> <sup>1</sup>Kuwait University, Kuwait <sup>2</sup>University of Basrah, Iraq <sup>3</sup>Royal Hospital, Oman <sup>4</sup>Tawam Hospital, United Arab Emirates <sup>5</sup>Basra Specialty Hospital, Basra, Iraq

**Introduction:** Transcranial Doppler (TCD) is used to identify patients with sickle cell disease (SCD) at risk for stroke. We have carried out TCD studies in patients from four countries in the Arabian Peninsula (Kuwait, Oman, Southern Iraq and UAE) to document the prevalence of abnormal TCD findings.

**Methods:** The patients were recruited form outpatient clinics and studied in steady state. TCD was performed using standard equipment with experienced operators. Time-averaged mean of maximum velocity (TAMMV) was documented in the arteries of the circle of Willis. The hemoglobin (Hb) genotype was confirmed and the fetal Hb (HbF) level and complete blood counts were determined.

**Results:** There were 415 patients in the study, aged 2 to 18 years (mean of  $8.6\pm3.5$ ). None of the patients had abnormal TAMMV (i.e. >200 cm/sec), while only 13 (3.1%), all from Iraq had conditional values in the right middle cerebral artery (MCA) and 7 (1.7%) in the left MCA. There were no significant gender differences, and both the Hb genotype (SS, S $\beta$ 0thal or SD) and the use of hydroxyurea did not show consistent influence on TAMMV. Total hemoglobin, reticulocyte count, serum bilirubin and HbF showed varying degrees of correlation with TAMMV in the different vessels.

**Conclusions:** This study has demonstrated the rarity of abnormal TCD in SCD from the Arabian Peninsula. This might be related to the haplotype, elevated HbF or may represent a racial variation. The guidelines for TCD screening in this population need further studies and recommendations.

## Biography

Akram Asbeutah's career in ultrasound spans 15 years and he is one of Australia's most highly regarded sonographers especially in the field of vascular ultrasound. Akram initially obtained his Bachelor of radiologic sciences in 1986 from Kuwait university- Faculty of Allied Health Sciences and then obtained his Master degree in Anatomy from Kuwait University-Faculty of Medicine in 1994 then he completed examinations in the Diploma of Medical Ultrasound (General) in Australia and as a Registered Technologist in the USA. In 2006 Akram completed his PhD thesis at Monash University entitled "What makes the veins incompetent"? Since 2002 Akram has been a clinical senior lecturer at the Department of Radiologic Sciences-Faculty of Allied Health Sciences, Kuwait University, providing comprehensive training in radiologic Imaging, Musculoskeletal and Vascular Ultrasound Imaging in a clinical environment. He is currently hold an assistant professor position at Department of Radiologic Sciences, Faculty of Allied Health Sciences, Kuwait University, Faculty of Medicine, Department of Medical Imaging from 1/6/2014 till 1/6/2018.

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