THE ROLE OF PLASMA D-DIMER AS AN INITIAL DIAGNOSTIC BIOMARKER OF CEREBRAL VENOUS SINUS THROMBOSIS IN A TERTIARY LEVEL HOSPITAL, BANGLADESH – CASE CONTROL STUDY.

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Background: Cerebral venous sinus thrombosis (CVST) are an uncommon cause of stroke and is often more difficult to diagnose than usual causes of stroke.A number of studies have confirmed the usefulness of D-dimer level in CVST. The aim of the current study to evaluate the correlation of plasma D-dimer levels in diagnosis of CVST. **Methods:** This case-control study was conducted on 50 stroke patients and 50 healthy individuals as the control group who will attend in the Department of Neurology of Sir Salimullah Medical College & Mitford Hospital, Dhaka Bangladesh during one year (2021-2022) with new onset headache and presentations suggestive of CSVT will be included in the study. Every medical or surgical condition which causes an increase in D-dimer level was considered as exclusion criteria. **Results:** Among patient group, 28(56%) patients were females, while 22(44%) patients were males, and the mean of age was 37.7±11.8 years. Headache was the most frequent presentation that observed in 90% of the patients. The patient with focal neurological signs, papilloedema and seizures came next in 52%, 44% and 30% respectively. The average duration of the symptoms was 6.9 ±3.2 days. Overall, the mean plasma level of D-dimer in CVST patients and controls were 526.7± 97.34 ng/mL and 332.3± 53.71 ng/mL respectively (Table: 3). Independent t-test revealed a significant difference (t= 2.167, p= 0.029). According to cut-off value of the assay (400 ng/mL) there were 44 CVST patients (88%) who were positive for the test compared with 7 (14%) among controls (p< 0.001). Stratification of the study population according to male revealed a wide gap between patient and control males (541.7± 114.9 ng/mL and 320.2±71.13 ng/mL respectively) with a significant difference (p= 0.017) (Table: 4). However, in females, this gap was narrower (530.4± 100.9 ng/mL in females with CVST and 349.7±92.5 ng/mL in healthy females) but still significant (p= 0.032). The test revealed that the area under the curve (AUC) was 0.879, 95%CI=0.807-0.95, p<0.001. The sensitivity and specificity of the test at cut off value of 400ng/mL were 0.88 and 0.86 respectively, indicating a very good discrimination value. The positive and negative predictive values of D-dimer in diagnosis of CVST were 86.27 % and 87.76% respectively. **Conclusion:** Our study suggests that measurement of D-dimer can be a reliable tool for diagnosis of CVST, especially in patients with acute and subacute disease.

Keywords: Plasma D-Dimer, Diagnostic Biomarker, Cerebral Venous Sinus Thrombosis

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