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Seasonal pattern of patients with cerebral venous sinus thrombosis and its effects on clinical and radiological characteristics and outcome of patients

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Background: Cerebral Venous Thrombosis (CVT) is an uncommon type of stroke which mostly involves young women. few studies have assessed the associations between and the seasonal variations and the characteristics of CVT. We aimed to investigate the associations between the seasonal variations and clinical and radiologic characteristic and outcome of CVT patients.

Methods: We conducted this cross-sectional study from August 2012 to September on adult patients with definite diagnosis of CVT. We evaluated Demographic data, radiologic findings, clinical presentation, risk factors and outcome on discharge. The frequency of CVT between warm months and other months was assessed.

Results: There were 174 CVT patients and 128(73.6%) were female. The highest frequency of CVT was seen in months of June to September. There was association between absence of headache in the warm months and the incidences of CVT in comparison to the other months (10.7 % in warm vs. 2% in other, P value 0.021) Subarachnoid hemorrhage was seen less in the warm months (1.3% in warm vs 9.1% in other months, p value 0.045). Among CVT patients with intracranial hemorrhage, infra-tentorial hemorrhage was more common in warm months(p value 0.043) There was correlations between Fasting (dehydration) and more occurrence of CVT in the warm months (20.0% vs 0.0%, P value 0.001). These patients used OCPs more in the warm months (50.7% vs 36.7 with P value 0.046). However no difference was detected in the discharge outcomes of the patients according to MRS score (p value 0.442).

Conclusion: It seems that the incidence of CVT increases in warm months. Dehydration and use of OCPs may play a part in such increase. During these months in 2012-2016, it was the month of Ramadan in Islamic calendar (July and august in 2012 & 2013, June and July in 2014 & 2015 & 2016) and fasting; hence more dehydration was common in these months. Pattern and location of hemorrhage showed to be different in warm months which needs more investigation in future. Absence of headache is more frequent in warm months which indicates the necessity of considering CVT as a differential diagnosis in patients who refer with other symptoms than headache in warm months; however, once CVT is diagnosed the outcome of the patients doesn't differ from the other months. In conclusion, seasonal pattern seems to have influence on characteristics of patients with CVST but has no effects on outcome.

Figure 1:

