INTRODUCTION

Cerebral venous thrombosis (CVT) is one of the rare stroke types which results in the formation of blood clots in the venous sinuses that responsible for brain drainage. Venous thrombosis can cause Venous infarction that results in brain tissue damage due to congestion and inadequate blood flow. Although the CVT is rare and includes less than 1% of strokes but in recent years, its recognition by using MRI and identification its clinical symptoms has increased. CVT was first reported in 1825 and its exact incidence rate is unknown but can affect all age groups from 6 days to 77 years. The average age is 33 years and the prevalence is higher in women. Various factors such as infections, hormonal imbalance, cancers, blood disorders, systemic diseases, trauma, drugs and dehydration could be risk factors for CVT. The clinical symptoms of the disease include headache, seizure, focal neurological defects and decreased consciousness confirmed by CT scan and MRI. Thrombosis is characterized by two different
mechanisms, one is a CVT with local effects due to venous obstruction and another one is large sinus thrombosis that leads to an increase intracranial pressure and in most patients, these two processes occur simultaneously.\textsuperscript{6,7,12,16-21} Thrombosis can also be caused by an imbalance between coagulation and fibrinolysis. Three main mechanisms of this imbalance included change in normal blood flow, vascular wall damage, changes in hypercoagulable blood composition and in most cases of CVT arises as a result of over coating.\textsuperscript{1}

The aim of the current study was to determine the risk factors and clinical manifestations of cerebral venous thrombosis in patients admitted to Zahedan city hospitals during the period of 2011-2017.

MATERIALS AND METHODS

This is a retrospective descriptive study was done among 50 patients with CVT who were hospitalized in Zahedan city hospitals from April 2011 to April 2017. The method of sampling was census and all of patients entered in the study. Demographic data including age, sex, season of the incidence of CVT, effective risk factors including pregnancy, OCP, infection, blood diseases, idiopathic, using drug or addiction, trauma, history of stroke or CVT, high blood pressure, diabetes mellitus, dehydration, fasting and Blood disorders, clinical symptoms including fever, headache, blurred vision, Lateralized symptoms, seizure and loss of consciousness which was extracted from patient's case history and recorded in a checklist. Due to the inability to examine headache and blurred vision in children under 3 years of age, these two symptoms were studied in patients over 3 years old and the use of OCP, pregnancy and postpartum period were studied in women.

Statistical analysis

Statistical analysis was done using the SPSS 19.0 program (Statistical Package for Social Sciences; SPSS Inc., Chicago, IL, USA) for Windows 8. Frequency and percent were calculated for categorical variables.

RESULTS

Of all patients included in the study, 68% were female and rest was male. Of patients less than 3 years old, 81.8% were male. Most of patients with 28% were in age group 34-43 years (Figure 1) and the most common season was summer comprising of 38% of the total patients. Headache was presenting symptom in 66% of patients of the disease (Figure 2). Infection with 30% was the most common risk factor in this study (Figure 3).

DISCUSSION

In this study most of patients were in age group 34-43 years (range 6 days to 77 years) and the findings of the present study were consistent with the results of other studies in different regions with a mean age in range of 31-37 years old.\textsuperscript{22,23} In this study 68% of the patients were women and similar to our study results in most studies, the proportion of women is higher than men. Contraception in women was a major risk factor, so taking contraceptive pills increases the
In the present study, pregnancy and postpartum period, as well as the use of contraceptive pills were the major risk factors but contrary to the present study in other reported studies the male patients exceeded than those of females which could be due to trauma and drug abuse among males.22

The prevalence of CVT was more in summer which could be possibly due to dehydration which concurs with the study reported elsewhere they claimed summer season had the high occurrence along with iron deficiency anemia. Decreased body water in the elderly and headaches were the main risk factors for incidence of thrombosis.9

In the current study, the most common symptom was headache occurred in 66% of the total of the total patients, followed by seizure, loss of consciousness, Lateralized symptoms and blurred vision. Headache which was due to increased intracranial pressure was observed in 90% of patients and can be accompanied by other symptoms such as seizure, hemiparesis, and aphasia.25

The prevalence of headache were 70%, 86.4% and 100% in the studies by Foroghipoor et al22 Khomand et al23 and Nikkhah et al26 respectively. While in the study of Khomand et al23 Papilledema and blurred vision were the second highest symptom of CVT after headache and in the present study, blurred vision was in the lower rank which was probably due to the lack of examination of patients for Papilledema. In the Foroghipoor study,22 headache, Papilledema, motor focal or sensory symptoms and decreased consciousness were the main symptoms that were consistent with the present study. Infection was the most common risk factor for CVT in the current study and other risks were use of OCP, dehydration, fasting, pregnancy and addiction. Foroghipoor et al22 stated the most common cause of thrombosis was OCP, pregnancy and infection which was consistent with the findings of the current study.22,23,26

In the study of Nikkhah et al26 the most common clinical symptom was headache and the causes of thrombosis was use of contraceptives, postpartum period, middle ear infection and nephrotic syndrome which was in concurrence with the present study.

In a review study between 1990 and 2005, the risk factors for thrombosis were genetic prothrombotic conditions, infections, pregnancy and postpartum period, inflammatory diseases, trauma and mechanical causes such as head trauma, dehydration especially in children and hematologic conditions. In another study, 14% of patients had a history of trauma one month before thrombosis, so head trauma could be a risk factor.27

In the present study, infection, pregnancy, postpartum period and dehydration were the major risk factors for CVT with trauma being the lower grade among risk factors.1 Another review study from 1987 to 2013 found that CVT is a multi-factorial disease which depends on gender variation and were associated with factors such as brain tumor, head trauma, extra-cerebral neoplasms, dural fistula, hematological conditions, nephrotic syndrome, systemic scoliosis, drugs, neurological surgery, luteal phase (LP), pregnancy, periodontal, OCP use and congenital factors which was almost similar to the findings of the current study. The most common symptom of this study was headache and other symptoms including mild paralysis, Papilledema, change the consciousness condition, aphasia, dizziness, coma, double vision and visual disturbances whereas in the present study, headache was the most common clinical symptom, followed by loss of consciousness and visual disturbances. It seems that gender is involved in the development of the disease and so prevention of vascular thrombosis is a vital and effective way to reduce mortality during pregnancy and postpartum period.28,29

CONCLUSION

The results of this study showed that the high prevalence of Venous sinus thrombosis more in women compared to men can be indicative of the association of this disease with risk factors such as the use of OCP, pregnancy and postpartum period. The most common symptom was headache and the summer being the most common month of occurrence which could be due to dehydration in patients.

Limitation of the study

Considering the low number of patients in this study and the high proportion of males involvement in children and the difference in risk factors and clinical symptoms. We suggest that a study that a study be conducted with longer duration and population and a study in the pediatric age group. Also, by conducting case studies in OCP users with thrombosis of the venous sinuses, we can obtain useful information in this regard.

CONFLICT OF INTEREST

None declared
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REFERENCES