

Traditional Practice of Fluid Restriction among Patients with Puerperium Associated Cerebral Venous Thrombosis in Rural India

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ABSTRACT

Background: Puerperium is well recognized as a period of increased susceptibility for thrombotic events like Cerebral Venous Thrombosis (CVT). In addition to the physiological changes, several other factors also cause dehydration in puerperium, making it a very vulnerable period for thrombotic events. Fluid intake may be restricted for mothers in early days after child birth in certain rural areas of southern India. The aim of this study was to estimate the fluid intake of patients with puerperium associated CVT. **Materials and Methods:** Interview was conducted among 35 patients with puerperal CVT and their primary caregivers to obtain the details of fluid intake during puerperium. **Results:** Most of the patients admitted with CVT hailed from rural areas (74.1%). Fluid restriction was practiced during post-partum period by 77.1% ($\leq 1500\text{ml}$) of the patients admitted with CVT. **Conclusion:** Varying degrees of fluid restriction is traditionally practiced in several areas of South India, especially in rural areas. Education of mothers and their primary caregivers is essential to make them understand the importance of adequate fluid intake during puerperium.

Key words: Cerebral venous thrombosis, Puerperium, Fluid restriction, Rural.

INTRODUCTION

In India, cerebral venous thrombosis (CVT) is predominantly seen in the young especially the women.¹ Pregnancy and puerperium are two periods of increased susceptibility for development of CVT among women.^{2,3} The development of venous thrombosis occurs due to one or more of the factors in the Virchow's triad, namely venous stasis, endothelial injury and hypercoagulability of the blood. The physiological changes of pregnancy cause substantial hypercoagulability of blood.⁴ This continues into the puerperium, making it a vulnerable period for thrombotic events like CVT. Hypercoagulability can also occur due to some underlying prothrombotic states like hyperhomocystinemia, lupus anticoagulant and protein S deficiency.¹

A major factor that can promote hypercoagulability is dehydration and the resultant hyper viscosity of blood. Blood loss during pregnancy, sweating and lactation causes fluid loss from the body of the mother, thereby increasing the viscosity of blood. Thus the fluid demand of mothers in puerperium increases significantly.⁵ Ironically, in several parts of India, especially rural regions of southern states, the traditional practice of fluid restriction during puerperium exists. 'Limiting the intake of water' is seen as a traditional post-partum practice in certain regions and communities around the world.^{6,7} In the seminal works of Srinivasan (1984), he acknowledges

anemia and the local practice of fluid restriction among Indian mothers as reasons for increased incidence of puerperal CVT in India.⁸ Restriction of fluid intake increases blood viscosity, making the puerperal mothers more prone for thrombotic events. Even though water restriction has been reported in post-partum mothers who developed CVT,⁹ a quantitative estimation of the entire fluid intake is necessary to understand the severity of this practice.

MATERIALS AND METHODS

This study aimed at obtaining a quantitative estimation of the fluid intake of post-partum mothers who developed CVT.

Patients who were admitted with puerperium associated CVT in the emergency department of a tertiary level public hospital in Bangalore, India, from March 2014 to March 2015 were included in the study. Ethical clearance was obtained from the institutional ethics committee. Only radiological confirmed cases of CVT were included. Puerperal mothers with other underlying prothrombotic conditions were also included in the study. Patients who do not speak the local language and belonged to other states of the country were excluded considering the difference in social and cultural background. Thus the sample consisted of only patients hailing from Karnataka. Interview was conducted among

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Table 1: Fluid intake of mothers in the post-partum period n=35.

Water intake /day	Frequency (%)	Cumulative Percentage
≤250 ml (upto 1 cup)	2 (5.7)	5.7
≤1000 ml (2-4 cups)	15(42.9)	48.6
≤1500 ml (5 -6 cups)	10(28.6)	77.1
≥1500 ml (unrestricted)	8(22.9)	100

the mothers and their primary care givers (mother or mother-in-law) to ascertain the amount of fluid consumed per day during the post-partum period. They were asked to make a recall of the fluid intake during the days after delivery. A calibrated vessel of 250 ml was shown to them so that the estimation was more accurate.

RESULTS

A total of 35 patients were included in the study. The age of the sample ranged from 19 to 42 with a mean of 25.1±4.5. Majority of them (82.9%) were housewives. Out of the 35 mothers, 8(22.9%) were illiterate and 20 (57.1%) were educated upto primary school. Majority of them 25(71.4%) hailed from rural area while 10(28.6%) were from urban area. Most of them 27(77.1%) had normal vaginal delivery, while 8 (22.9%) had delivered by cesarean section.

Some degree of fluid restriction is observed in 77.1 % of the cases admitted with puerperium associated CVT. The intake was not restricted and was more than 1500 ml per day in 9(22.9%) mothers (Table 1). Out of the 35 patients, 24 said that they were permitted only to drink warm fluids during puerperal period. When the reason for fluid restriction was enquired to the 27 patients who followed some degree of fluid restriction, 19 (70.3%) responded that it was considered important to improve the physical well-being of mother and child and to hasten the recovery during puerperium. They also believed that too much water intake can cause fluid retention and abdominal bloating. The other 8 (29.6%) were just following it traditionally without knowing why is it followed.

DISCUSSION

In the present study, majority of the patients hailed from rural areas. The traditional practice of fluid restriction is mostly prevalent in the rural areas of South India.⁹ In this study, some degree of fluid restriction (≤1500ml/ day) was practiced by 77.1% of the patients who had puerperium associated CVT. This is similar to the previous report by Aaron *et al.* who found that water is restricted (<1000ml) in 60.5% of the patients with puerperal CVT.⁹ The study by Aaron *et al.* was conducted in Tamil Nadu, one of the South Indian states of India and the current study was conducted in Karnataka which is another South Indian state.

Extremely severe restriction of fluid intake (<250ml/day) was imposed on two of the patients. Fluid intake which is as low as this can even lead to other serious conditions like renal failure.

Misconception regarding need for fluid restriction was found to be prevalent among the patients. Most of the patients believed that warm water only should be consumed. A qualitative systematic review of the traditional post-partum practices and rituals has shown that cold foods are usually not given to mothers and they are not exposed to cold wind

and cold showers, in various cultures across the globe as they are thought to adversely influence the health of mothers.¹⁰ Most of such practices lack a scientific base or reason. In Karnataka, puerperal mothers are seen wearing tight scarves around their heads to prevent exposure to cold wind. This study also hints at such irrational beliefs related to post-partum care that exist among the public. These kinds of beliefs have several social and cultural dimensions. Local practices and customs should be explored to understand the practices in detail.

Fluid restriction should be considered as a modifiable risk factor for CVT in post-partum mothers. However, the finding of this study does not ascertain causality between restriction of fluids and CVT. The presence of other prothrombotic conditions in the patients was not explored in this study. This study can be replicated and the fluid intake in healthy puerperal mothers from rural regions of the country can be compared with the fluid intake of mothers with CVT.

CONCLUSION

Fluid restriction during puerperium is a common practice in south of India especially in rural areas. Community education is imperative to make the public understand about the importance of adequate fluid intake as a health promotion practice for mothers in the puerperium.

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CONFLICT OF INTEREST

The author has no conflict of interest to declare.

ABBREVIATIONS

CVT: Cerebral venous thrombosis.

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