



CLINICAL AND SOCIO-DEMOGRAPHIC PROFILE OF DEEP VENOUS THROMBOSIS IN A TERTIARY CARE CENTER: A CROSS-SECTIONAL STUDY.

Cardiology

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ABSTRACT

Background: Venous thrombosis is a serious medical event associated with a substantial risk of adverse outcomes. There is little published information from Maharashtra (India) about DVT. Most of the studies from India are on post operative patients who had DVT. Hence present study was planned to study clinical profile of deep venous thrombosis in order to find important risk factors, demographic profile, clinical presentations and mortality associated with DVT. **Material & methods:** Present cross-sectional study was conducted during period July 2010- June 2011 on admitted and diagnosed as a case of deep venous thrombosis in Government medical college and hospital, Latur, Maharashtra state. **Results:** DVT had slight male preponderance (58.32%). There was no seasonal variation in incidence of deep venous thrombosis. DVT commonly presents with swelling (77.59%) and pain (68.97%) in affected lower limb. DVT commonly affects proximal veins (55.17%). **Conclusion:** Most common risk factors for DVT were immobilization, smoking and puerperium. Overall prognosis of deep venous thrombosis was good.

KEYWORDS

Deep venous thrombosis, clinical profile, thrombus

INTRODUCTION:

Thrombosis can be considered as “hemostasis in the wrong place and at the wrong time,” with dysregulation of one or more elements of hemostatic system contributing to formation of a platelet-fibrin thrombus that often occludes blood vessels, leading to pathologic complications. It is a major cause of morbidity and mortality in a wide range of arterial and venous disease and patient populations.^[1]

Thrombus formation in the venous system, typically deep venous thrombosis, leads to local tissue congestion and decreased venous blood return, but dislodged thromboembolism may result in the potentially devastating complications of pulmonary infarction or, paradoxically, stroke.^[2]

The prevailing belief that venous thrombosis in the Asian population is less than in the western population has been disproved by recent studies and there appears no reason to believe that it should be any different in India. The incidence of venous thrombosis in India is highly underestimated because of lack of adequate studies highlighting the incidence of venous thrombosis especially in medical patients, existence of a few but conflicting studies in post-surgical patients and paucity of data from autopsied patients as autopsy is being done in very few institutions in India.^[3,4]

There is little published information from Maharashtra (India) about DVT. Most of the studies from India are on post operative patients who had DVT. Hence there is a need of study on clinical profile of deep venous thrombosis in order to find important risk factors for venous thrombosis, population affected, clinical presentations, mortality and to identify potential areas of intervention.

MATERIALS AND METHODS:

The present hospital based cross-sectional study was conducted in Government Medical College and Hospital, Latur in Maharashtra state during period July 2010 to June 2011. Ethical committee clearance was taken before the start of the study.

Study was conducted on total 58 study subjects who were hospitalized during study period with history suggestive of deep venous thrombosis and confirmed by radiological investigations (Color Doppler study or MR venogram of lower limbs) were included the study. Patients less and 12 years of age and not willing to participate in the study were excluded.

Data was collected by using standardized assessment forms (questionnaire). Purpose of the study was carefully explained to the patient and/or his/her relatives and written informed consent was taken. Information collected included demographics, history of

present illness, significant past and family history, history of predisposing risk factors such as puerperium, immobilization, OC pill use, malignancy and physical examination findings.

Investigations like CBC, Peripheral smear, ESR, BT, Cl.T, PT, aPTT, INR, BSL(R), Sr. Creatinine, Blood Urea, Sr. Bilirubin, ECG, CXR PA, Lower Limb Venous Doppler, CT/MRI Brain, MR Venogram were done. Outcome of each patient was classified as either discharged or death. Data thus obtained was tabulated and statistically analyzed using percentage, mean, standard deviation.

RESULTS:

Table 1. Age-wise Distribution Of Study Subjects

Sr. No.	Age (yrs)	DVT	
		No.	%
1.	< 20	4	6.90
2.	21 to 40	28	48.28
3.	41 to 60	15	25.86
4.	>60	11	18.96
Total	58	100	

Total 58 study participants were included in the study. Among that 34 (58.62%) were male and remaining 24 (41.38%) were female.

Around half of the study subjects were young adults i.e. 48.28% belongs to 21 to 40 years of age group. Very less i.e. 6.90% were below 20 years of age group. Mean age of study participants were 40.78 + 17.38 with minimum age as 17 years and maximum age were 82 years. (Table 1)

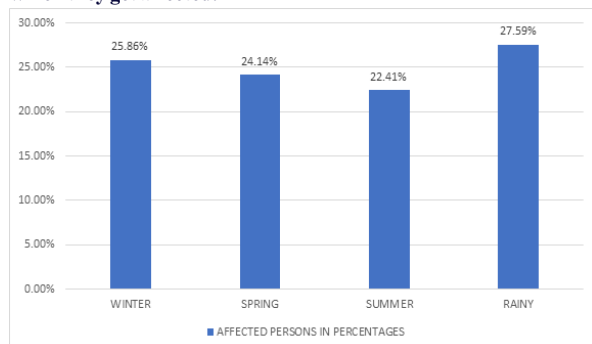
Table 2. Distribution Of Study Subjects According To Occupation.

Sr. No.	Occupation	DVT	
		No.	%
1.	Teacher	1	1.72
2.	Clerk	3	5.17
3.	Driver	4	6.90
4.	Housewife	11	18.97
5.	Farmer	8	13.79
6.	Laborer	19	32.76
7.	Other*	12	20.69
Total		58	100

*Other includes unemployed patients, non-working old patients.

While considering occupation of study subjects, it was found that majority were labourers (32.76%) among females most were housewives. (Table 2)

Bar Diag.1 Distribution of study subjects according to season in which they get affected.



27.59% study subjects get affected in rainy season followed by 25.86% in winter.

Table 3. Clinical Features Of Study Subjects.

Sr. No.	Clinical Features*	No. of Patients	Percentage
1.	Swelling	45	77.59
2.	Pain	40	68.97
3.	Calf tenderness	38	65.52
4.	Edema	30	51.72
5.	Homan's sign	19	32.76
6.	Redness	17	29.31

*One patient may have more than 1 clinical feature

Swelling (77.59%) followed by pain (68.97%) and calf tenderness (65.52%) was most common sign and symptoms among study subjects. Redness was occurred among 29.31 % study subjects. (Table 3)

Table 4. Distribution Of DVT Patients According To Site Of Thrombosis.

Sr. No.	Site of thrombosis in Lower Limb	No. of Patients	Percentage
1.	Proximal	32	55.17
2.	Distal	22	37.93
3.	Proximal and distal	04	6.90
Total		58	100

Proximal lower limb DVT was more common found in 32 (55.17%) patients compared to distal in 22 (37.93%) patients. (Table 4)

Table 5. Sex-wise distribution of Risk factors for Deep Venous Thrombosis.

Sr. No.	Risk Factors [#]	DVT			
		Male (n=34)	%	Female (n=24)	%
1.	Immobilization	15	44.12	06	25
2.	Smoking	12	35.29	00	0.00
3.	Puerperium	00	0.00	11	45.83
4.	P/H/O venous thrombosis	04	11.76	02	8.33
5.	Malignancy	05	14.71	00	0.00
6.	Pregnancy	00	0.00	04	16.67
7.	OC Pills	00	0.00	02	8.33
8.	F/H/O venous thrombosis	02	5.88	00	0.00
9.	Other*	05	14.71	01	4.17

[#]One patient may have more than one risk factor.

*Other includes clinically no obvious risk factor.

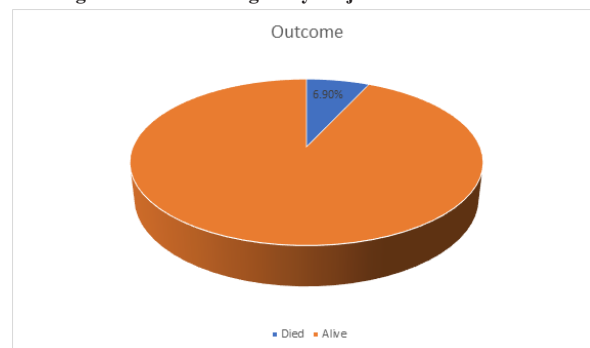
In DVT group of patients, in males most common risk factor was immobilization in 15 (44.12%) patients followed by smoking in 12 (35.29%) patients. In females most common risk factor was puerperium in 11 (45.83%) patients followed by immobilization in 6 (25%) patients and pregnancy in 4 (16.67%) patients. (Table 5)

DISCUSSION:

Venous thrombosis is one of leading cause of morbidity, mortality and cost burden. Venous thrombosis more commonly occurs at sites like lower limb leading to deep venous thrombosis (DVT) which present

with variable clinical features which needs confirmation by radiological investigations.

Pie Diag. 1. out come among study subjects



Out of 58 study subjects total 4 patients died.

Mean age of study subjects was 40.78 years with majority of patients in age group between 21 to 40 years (28 patients, 48.28%). In a study conducted by **Syed FF et al**, in 232 episodes of lower limb DVT, mean age was 62.8 years and there was a bimodal pattern of ages, with peaks seen in age groups 26-30 and 71-75 years.^[5]

Male predominance was found in affected study subjects, with M:F ratio of 1.4:1. The age specific incidence of symptomatic venous thrombosis has been generally found to be higher in men than in women according to North American studies. Anderson and colleagues^[6] calculated the relative risk of venous thromboembolism for males versus females to be 1.4.^[6]

Occupations associated with prolonged periods of sitting like computer job, driver were thought to be associated with DVT but persons who were ambulatory and apparently healthy also suffered from DVT^[7]. Similarly in this study also majority were laborer by occupation (38.30%).

In the present study there was no seasonal variation in the incidence of venous thrombosis. Various studies have been done till date on seasonal variation in incidence of venous thrombosis having conflicting results. In a study carried out by **Lawrence J.C. et al**, they found seasonal variation in incidence of DVT with more cases in cold months of the year.^[8] In a study of **Bounameaux H et al** there was no seasonal variation in incidence of DVT.^[9]

In the present study, the most common presenting complaints were swelling (77.59%) and pain (68.97%) of the affected lower limb. Other features were calf tenderness (65.52%), edema of lower limb (51.72%), Homan's sign (32.76%) and redness (29.31%). Comparable results were found in a study carried by **Sun KK et al**, where most common clinical presentations of DVT were swelling (66.2%) and pain (40.5%) of the affected extremity.^[10]

In this study, among males most common risk factors were immobilization (44.12%) and smoking (35.29%). Most common risk factor in females was puerperium (45.83%) followed by immobilization (25%) and pregnancy (16.67%). In a study of **Gebremedhin A et al**, 40% cases of DVT in females were due to pregnancy and pregnancy-related conditions.^[11] In a study on females by **Fletcher HM et al**, risk factors that found commonly in females were immobilization (36.3%), malignancy (14%), pregnancy (5.9%) and smoking (4.3%).^[12]

CONCLUSION:

DVT had slight male preponderance. There was no seasonal variation in incidence of deep venous thrombosis. DVT commonly presents with swelling and pain in affected lower limb. DVT commonly affects proximal veins. Most common risk factors for DVT were immobilization, smoking and puerperium. Overall prognosis of deep venous thrombosis was good.

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