

# A study of clinical profile of 50 patients with deep venous thrombosis at general hospital

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## Abstract

**Background:** In the past decade, deep venous thrombosis has increasingly been recognized as an important and possibly preventable cause of mortality and morbidity in hospitalized patients. The disease can occur after surgical procedures and trauma and in the presence of cancer or inherited coagulation disorders; it can also develop without any of these factors. The clinical course of deep vein thrombosis might be complicated by pulmonary embolism, recurrent episodes of deep vein thrombosis, and the development of serious post-thrombotic sequel, such as venous ulceration, debilitating pain, and intractable edema. **Cases:** Total 50 patients have been studied in this study.

**Keywords:** clinical profile, deep vein thrombosis.

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## INTRODUCTION

Venous thromboembolism is predominantly a disease of older age. The age and sex adjusted venous thromboembolism incidence rate for persons age 15 years or older is 149 per 100,000. The overall age-adjusted incidence rate is higher for men (130 per 100,000) than women (110 per 100,000; male: female sex ratio is 1.2: 1)<sup>1,2</sup>. After controlling for active cancer, additional independent risk factors include increasing patient age and body mass index (BMI), prior superficial vein thrombosis, chronic renal disease, neurological disease with extremity paresis, fracture and immobility<sup>3</sup>, and possibly infection<sup>4</sup>. The incidence of pulmonary embolism has decreased over time, the incidence of deep vein thrombosis has increased. Active cancer accounts for almost 20% of incident venous thromboembolism events occurring in the community<sup>5</sup>. The annual venous

thromboembolism incidence is five-fold higher among postpartum compared to pregnant women (511.2 versus 95.8 per 100,000). Other conditions associated with venous thromboembolism include heparin-induced thrombocytopenia, myeloproliferative disorders (especially polycythemia rubra vera and primary thrombocythemia), intravascular coagulation and fibrinolysis/disseminated intravascular coagulation (ICF/DIC), nephrotic syndrome, paroxysmal nocturnal hemoglobinuria, thromboangiitis obliterans (Buerger's disease), thrombotic thrombocytopenic purpura, Bechet's syndrome, systemic lupus erythematosus, inflammatory bowel disease, Wegener's granulomatosis, homocystinuria, and possibly hyperhomocysteinemia<sup>6,7</sup>. Low molecular weight heparin has been approved for the prevention and treatment of venous thromboembolism in pregnancy. These drugs do not cross the placenta and large case series suggest they may be both effective and safe<sup>8</sup>.

## AIMS AND OBJECTIVES

- 1) To study age, sex, etiological factors of deep venous thrombosis in our institute.
- 2) Evaluation of risk factors in patients with deep venous thrombosis.
- 3) To study the complications of deep venous thrombosis.

**MATERIALS AND METHODS**

**MATERIALS**

**Period** Dec. 2012 to Dec. 2014.

**Sample** Study population consist of 50 consecutive patients of deep venous thrombosis, attending to our institute in the above mentioned period.

**Facilities available in this Institute for this study**

Radiological investigation ( Color Doppler, chest x-ray, CT-angiography, MR-angiography ) in department of radiology, Routine pathological lab investigation in the department of pathology, Routine biochemistry investigation in department of biochemistry, Routine microbiology lab investigation in the department of microbiology (sos ).

**Inclusion Criteria** Patients with radiographically (Doppler / CT venogram) proven deep venous thrombosis, Age above 18 years.

**Exclusion Criteria** Age below 18 years.

**METHOD**

For all patients evaluation plan will be as follows:- Detailed clinical history followed by thorough clinical examination including all routine investigations.

- i) Investigations
    - Venous color Doppler.
    - CT angiography (if indicated).
    - Chest X ray.
    - 2D-echo(cardiac).
    - Prothrombin time(PT), BT, CT, INR.
    - Routine lab investigation such as Haemogram, Blood sugar level, Sr. electrolytes, BUL, Sr. creatinin, Sr.bilirubin, sr. homocysteine.
    - Lipid profile.
  - ii) Management:-
    - Unfractionated heparin and oral anticoagulants, Tab. Warfarin 75 mg OD, Tab. Aspirin 150 mg OD, Tab. Clopidogrel 1 OD.

All patients were put on Tab. Homocek 1 OD to combat homocysteine abnormality as a preventive aspect.

Analgesics such as Tab. Diclofenac Sodium.  
Intravenous or oral antibiotics (sos).
- iii) Reinvestigations:-
    - PT-INR every 4 days, follow up Color venous Doppler every 3 weeks, chest x-ray if needed.
  - iv) Discharge as per individual improvement and response to treatment.
  - v) Follow up after 3 weeks for review color venous Doppler.

**OBSERVATIONS AND RESULTS**

A total of 50 patients who were confirmed to be having deep vein thrombosis by compression B-mode

ultrasonography of deep veins of lower limb constituted the study population.

**Table 1: Age distribution of patients studied**

Age in years	Number of patients	%
18-29	7	14.0
30-39	10	20.0
40-49	10	20.0
50-59	14	28.0
60-69	6	12.0
70-80	3	6.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

In our study the youngest patient was 20 years old and the oldest patient was 78 years old.

**Table 2: Gender distribution of patients studied**

Gender	Number of patients	%
Male	28	56.0
Female	22	44.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

In our study, out of 50 patients 28 were male (56%) and 22 were female (44%). Male:Female ratio was 1:0.78 .

**Table 3: Risk factors**

History	Number of patients	%
<b>Smoking</b>	23	46.0
<b>Hypertension</b>	7	14.0
<b>Diabetes Melitus</b>	2	4.0
<b>Stroke</b>	2	4.0
<b>IHD</b>	2	4.0
<b>Immobilisation</b>	15	30.0
<b>Malignancy</b>	3	6.0
<b>Use of oral contraceptive pills / hormone replacement therapy</b>	2	4.0
<b>Trauma</b>	7	14.0
<b>H/o recent long journey</b>	0	0.0

**Smoking** 23 out of the total of 50 patients (46%) were chronic habitual smokers.

**Hypertension** 7 of the 50 patients (14%) were diagnosed cases of hypertension.

**Diabetes** 2 of the 50 patients (4%) were diagnosed cases diabetes mellitus.

**Stroke** 2 patients (4%) had previous history of stroke.

**IHD** History of Ischemic Heart Disease was present in 2 patients (4%).

**Immobilisation** 15 out of the 50 patients (30%) had history of immobilisation due to CVA, fracture of lower limbs, major surgery.

**Malignancy** 3 of 50 patients (6%) were diagnosed cases of malignancy.

**OCP/HRT** 2 patients (4%) were taking oral contraceptive pills.

**Trauma** 7 patients (14%) had history of trauma to affected lower limb.

**Table 4:** History of pregnancy or puerperium

History of pregnancy or puerperium	Number of patients (n=22)	%
Yes	4	18.18
No	18	81.82

History of pregnancy or puerperium was present in 4 out of 22 female in our study group patients (18.18).

**Table 5:** Family and previous history of Deep venous thrombosis

Deep vein thrombosis	Number of patients (n=50)	%
<b>Family history</b>	<b>0</b>	<b>0.0</b>
<b>Previous history</b>	<b>4</b>	<b>8.0</b>

There was no family history of deep venous thrombosis in any patient and 4 patients (8%) had previous history of deep vein thrombosis.

**Table 6:** History of Surgery

History of surgery	Number of patients (n=50)	%
Yes	5	10.0
No	45	90.0

History of major Surgery was present in 5 (10%) of patients such as major abdominal and pelvic surgeries and orthopaedic surgeries.

**Table 7:** Associated medical / surgical conditions

ASSOCIATED MEDICAL / SURGICAL CONDITIONS	Number of patients (n=50)	%
<b>Yes</b>	<b>15</b>	<b>30</b>
<b>No</b>	<b>35</b>	<b>70</b>

Out of 50 patients studied, 15 (30%) patients had associated surgical or medical illness. One patient each had right intertrochantric fracture, right patella fracture, septic arthritis, osteoarthritis, varicose vein, pulmonary tuberculosis and Fistula in ano. Two had Ischemic Heart Disease, two had Chronic Obstructive Pulmonary Disease, two had Acid Peptic Disease and two had episode of cerebro-vascular accident.

**Table 8:** Location of DVT

Location of DVT	Number of patients (n=50)	%
Right sided DVT	18	36.0
Left sided DVT	32	64.0
Bilateral DVT	0	0.0
Proximal DVT	18	36.0
Distal DVT	38	76.0
Proximal and distal DVT	6	12.0

**Pain** over affected limb was present in all 50 (100%) patients.

**Swelling** over affected limb was present in all 50 (100%) patients.

**Tenderness** over affected limb was present in 47 (94%) of patients.

**Table 9:** Tenderness of the affected limb

Tenderness of the affected limb	Number of patients (n=50)	%
Yes	47	94.0
No	3	6.0

**Table 10:** Homan's sign

Homan's sign	Number of patients (n=50)	%
<b>Yes</b>	<b>38</b>	<b>76.0</b>
<b>No</b>	<b>12</b>	<b>24.0</b>

Homan's sign was present in 38 (76%) of patients.

**Table 11:** Resolution of clinical signs

Resolution of clinical signs	Number of patients (n=50)	%
<b>Yes</b>	<b>47</b>	<b>94.0</b>
<b>No</b>	<b>3</b>	<b>6.0</b>

Clinical signs resolved in 47 (94%) of the patients over the duration of 6 weeks after treatment whereas in 3 (6%) of the patients there is no resolution of clinical signs observed.

**Table 12:** Venous Doppler Changes

Venous Doppler Changes	Number of patients (n=49)	%
<b>Complete recanalisation</b>	<b>24</b>	<b>48.97</b>
<b>Partial recanalisation</b>	<b>22</b>	<b>44.89</b>
<b>No recanalisation</b>	<b>3</b>	<b>6.12</b>

24 (48.97%) patients showed complete recanalisation, 22 (44.89%) patients showed partial recanalisation and 3 patients (6.12%) showed no recanalisation on repeated venous Doppler of affected limb. One patient died during treatment due to pulmonary thromboembolism.

**Table 13:** Complications of deep vein thrombosis

Complications of deep vein thrombosis	Number of patients (n=50)	%
<b>Pulmonary thromboembolism</b>	<b>2</b>	<b>4.0</b>
<b>Varicose Vein</b>	<b>1</b>	<b>2.0</b>
<b>Ulcer</b>	<b>2</b>	<b>4.0</b>
<b>Death</b>	<b>1</b>	<b>2.0</b>

Out of 50 patients 2 (4%) patients developed pulmonary thromboembolism, 1(2%) patient developed varicose vein over affected limb, one patient (2%) developed ulcer over affected limb, one patient (2%) died due to pulmonary thromboembolism.

**Table 14:** Complications of treatment

Complications of treatment	Number of patients (n=50)	%
<b>Minor Bleeding</b>	<b>1</b>	<b>2.0</b>
<b>Major Bleeding</b>	<b>1</b>	<b>2.0</b>
<b>IC Bleed</b>	<b>0</b>	<b>0.0</b>

During treatment one patient (2%) out of 50 had minor conjunctival hemorrhage and one had major nasopharyngeal hemorrhage.



**Legend:**

**Figure 1** A photograph showing acute deep vein thrombosis of right lower limb.

**Figure 2** A photograph showing left lower limb deep vein thrombosis with varicose vein

**Figure 3** A patient with left lower limb deep vein thrombosis with ulcer

**Figure 4** A photograph showing right conjunctival hemorrhage during treatment of deep vein thrombosis with heparin

**DISCUSSION**

A total of 50 patients who were confirmed to have deep vein thrombosis by compression B-mode ultrasonography of lower limbs were enrolled in the study. All patients were treated with unfractionated heparin after recording the baseline clinical parameters. The unfractionated Heparin 5000 units s/c or i/v was given for a minimum period of three to five days and oral anticoagulant was started immediately. Our study included patients of age group between 20 years to 78 years. In the study done by Silverstein et al, the mean age group of patients with Deep Vein Thrombosis was 51 years<sup>2</sup>. The age distribution of patients in our study was in accordance with this trend with average age of the patients being 47.06 years. Out of 50 patients, 28 were male (56.0%) and 22 were female (44.0%). Female: Male ratio is 1: 0.78. In the study by Silverstein et al, venous thromboembolism is known to be associated with slight male preponderance (M: F = 1.2:1)<sup>2</sup>. The sex distribution of patients in our study was in accordance with this trend. In our study, among the established risk factors, pregnancy or puerperium was present in 8.0%, history of immobilization was present in 30.0%, trauma in 14.0%, major surgery in 10.0%, malignancy was present in 6.0% patients. In the study done by Alikhan R et al, malignancy and immobilization were associated with increased risk of

venous thromboembolism<sup>4</sup>. This finding correlated with the findings of our study. On successive follow up of these patients, 24 patients (48%) showed complete recanalisation on venous color Doppler, 22 patients (44%) showed partial recanalisation on venous color Doppler, 3 patients (6%) showed no recanalisation and 1 patient died during treatment due to pulmonary thromboembolism. In a study done by U.K. Franzeck and et al 64% of patients with multiple thrombosis were recanalised completely<sup>9</sup>.

**CONCLUSIONS**

The established direct risk factors for deep vein thrombosis were immobilisation, major surgery, trauma, malignancy, pregnancy and puerperium, smoking. Hypertension, coronary artery disease, obesity and diabetes were not the direct risk factors for deep vein thrombosis. Unfractionated heparin were effective in the treatment of deep vein thrombosis with least complications. Pulmonary thromboembolism, chronic venous insufficiency and venous ulcer over affected limb were complications of deep vein thrombosis. Patient need to have regular follow up to assess the recanalisation. Patient needs to be highly motivated and educated regarding need to regular oral medication. Regular check up of coagulation profile is must to avoid bleeding episodes which can be fatal.

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