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Original Research Article

The Analysis of the Clinical Profile of Patients with Deep Vein Thrombosis and Factor Associated with Over and Under Coagulation

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Abstract

Background: Venous thrombosis is a frequent cause of hospitalization worldwide; however, data describing its clinical profile in Indian patients, particularly from hilly regions, remain limited.

Aims and Objective: Our study predominantly aims at studying the clinical profile, risk factors, and the clinical outcomes in patients presenting to a single tertiary care center to rapidly detect the disease.

Material and Methods: A prospective observational study involving 40 patients of confirmed cases of VTE who presented to this tertiary care hospital during a period from October 2025 to March 2026. Data collected included the age, sex, clinical presentation, risk factors, diagnostic modalities, and their clinical outcomes. Descriptive analysis was carried out by mean and standard deviation for quantitative variables; frequency and proportion for the categorical variables.

Results: Among the study groups, 28 (70%) had DVT, 3 (7.5%) had PE, and 9 (22.5%) had both. Major risk factors detected included smoking history (58%), recent surgery (11%), malignancy (8%), history of immobility (9%), and past history of DVT (12%). The clinical presentation mainly included leg pain (68%) and leg swelling (78%). The outcomes were predominantly re-canalization (36%), recurrent DVT (16%), recurrent PE (1%), chronic DVT (22%), chronic venous insufficiency (33%), chronic venous ulcer (4%), pulmonary hypertension (13%), and death (3%).

Conclusion: we have highlighted the possible risk factors, clinical presentation, and clinical outcomes to identify the disease early and help us initiate appropriate thrombo prophylaxis to reduce morbidity.The established direct risk factors for deep vein thrombosis were immobilization, major surgery, trauma, malignancy, pregnancy and puerperium, smoking.

Keywords: Deep vein thrombosis, clinical Profile and coagulation.

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Introduction

Venous thromboembolism (VTE) commonly presents as either deep-vein thrombosis (DVT) or pulmonary embolism (PE). Despite rapid advances in its diagnostic and therapeutic modalities, it still leads to significant morbidity and mortality. Thrombosis is defined as the formation of a blood clot inside the blood vessel, which obstructs the blood flow through the circulatory system. The most common presentations of venous thrombosis include deep-vein thrombosis (DVT) of the lower extremity and pulmonary embolism (PE). A major theory delineating the pathogenesis of venous thromboembolism (VTE), often called Virchow's triad [1,2], proposes that VTE occurs as a result of Alterations in blood flow (i.e., stasis), vascular endothelial injury and Alterations in the constituents of the blood (i.e., inherited or acquired hyper-coagulable state). 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 incidence rate is higher for men (130 per 100,000) women (110 per 100,000; male: female sex ratio is 1.2: 1) [3,4]. 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 [5], possibly infection [6]. 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 [7]. 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, myelo-proliferative disorders (especially polycythemia rubra vera and primary thrombocythemia), intravascular coagulation and fibrinolysis/disseminated intravascular coagulation(ICF/DIC), nephrotic syndrome, paroxysmal nocturnal hemoglobinuria, thromboangiitis obliterans (Burger's disease), thrombotic thrombocytopenic purpura, Bechet's syndrome, systemic lupus erythematous, inflammatory bowel disease, Wegener's granulomatosis, homocystinuria, and possibly hyperchromocysteinemia [8,9]. Low molecular weight heparin has been approved for the prevention and treatment of venous thromboembolism in pregnancy, drugs do not cross the placenta and large case series suggest they may be both effective and safe [10].

Aims and Objective: The study predominantly aims at studying the clinical profile, risk factors, and the clinical outcomes in patients presenting to a single tertiary care center to rapidly detect the disease.

Material and Methods

This is hospital based cross-sectional observational study was conducted over 6 months period from October 2025 to March 2026. All adult patients admitted with clinically suspected and radiologically confirmed venous thrombosis who met the inclusion and exclusion criteria were included. Clinical characteristics were described, and the prevalence of elevated D-dimer levels across different venous thrombosis sites was assessed. The modified Wells pre-test probability scores were applied retrospectively to patients with confirmed DVT and pulmonary embolism to determine the proportion.

Forty Patients admitted in the department of medicine of Madhubani Medical College and Hospital, Madhubani, Bihar, India who met the inclusion criteria was studied. Patients of confirmed cases of VTE who presented to this tertiary care hospital during the above mentioned period, Data collected included the age, sex, clinical presentation, risk factors, diagnostic modalities, and their clinical outcomes. Descriptive analysis was carried out by mean and standard deviation for quantitative variables; frequency and proportion for the categorical variables.

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Inclusion Criteria: Patients with radiographically (Doppler / CT venogram) had proven deep venous thrombosis, Age above 20years and up to 66 years.

Exclusion Criteria: Age below 20 years.

Statistical Analysis: Data was entered in MS excel and analyzed using SPSS version 17. Descriptive studies of mortality and complications were analyzed and presented in terms of Percentages. Chi-Square Test was used to compare the proportion of death and complications between the groups.

Results

Out of 40 among the study groups, 28 (70%) had DVT, 3 (7.5%) had PE, and 9 (22.5%) had both. Major risk factors detected included smoking history (58%), recent surgery (11%), malignancy (8%), history of immobility (9%), and past history of DVT (12%). The clinical presentation mainly included leg pain (68%) and leg swelling (78%). The outcomes were predominantly re-canalization (36%), recurrent DVT (16%), recurrent PE (1%), chronic DVT (22%), chronic venous insufficiency (33%), chronic venous ulcer (4%), pulmonary hypertension (13%), and death (3%). In our study population, the most common pro-thrombotic state was found to be hyper-homocysteinemia.

Table 1: Age distribution of patients studied

Age in years	Number of patients	%
20-29	4	10
30-39	8	20
40-49	11	27.5
50-59	7	17.5
60-66	10	25
TOTAL	40	100

In our study the youngest patient was 20 years old and the oldest patient was 66 years old.

Table 2: Gender distribution of patients studied

Gender	Number of patients	%
Male	28	70
Female	12	30
Total	40	100

In our study, out of 50 patients 28 were male (56%) and 22 were female (44%).
Male:Female ratio was 1.2:1.

Discussion

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 66 years. In the study done by Silverstein et al, the mean age group of patients with Deep Vein Thrombosis was 51 years [4]. 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 40 patients, 28 were male (70%) and 12 were female (30%). Female: Male ratio is 1:0.43. In the study by Silverstein et al, venous thromboembolism is known to be associated with slight male preponderance (M: F = 1.2:1) [4]. 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 6.80%, history of immobilization was present in 30.0%, trauma in 13.5%, and major surgery in 9%, malignancy was present in 4.0% patients.

In the study done by Alikhan R et al, malignancy and immobilization were associated with increased risk of venous thromboembolism [6]. This finding correlated with the findings of our study. On successive follow up of these patients, 16 patients (40%) showed complete recanalization on venous color Doppler, 22 patients (55%) showed partial recanalization on venous color Doppler, only 1 patients (2.5%) showed no recanalization 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 reanalyzed completely[11].

Conclusion

In our study of VTE patients, we have highlighted the possible risk factors, clinical presentation, and clinical outcomes to identify the disease early and help us initiate appropriate thrombo prophylaxis to reduce morbidity.The established direct risk factors for deep vein thrombosis were immobilization, 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 was 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 access the recanalization. Patient needs to be highly motivated and educated regarding need to regular oral medication.

References

1. Dickson BC. Venous thrombosis: On the history of Virchow's triad. Univ Toronto Med J 2004; 81:166.
2. Bagot CN, Arya R. Virchow and his triad: A question of attribution. Br J Haematol 2008; 143:180–90.
3. Caggiti A, Allegra C. The Vein Book. Oxford: Elsevier; 2007. Chapter 1, Historical Introduction; p 1-14.
4. Silverstein MD, Heit JA, Mohr DN, Petterson TM, O'Fallon WM, Melton LJ III. Trends in the incidence of deep vein thrombosis and pulmonary embolism: A 25- year population-based study, Arch Intern Med. 1998. 158: 585-593.
5. Heit JA, Petterson TM, Bailey KR, Melton LJ III. Risk factors for venous thromboembolism among patients hospitalized for acute medical illness: A populationbased case-control study, J ThrombHaemost. 2005. 3(8): 1611.
6. Alikhan R, Cohen AT, Combe S, Samama MM, Desjardins L, Eldor A et al. Risk factors for venous thromboembolism in hospitalized patients with acute medical illness, Arch Intern Med. 2004. 164: 963-968.
7. Heit JA, O'Fallon WM, Petterson TM, Lohse CM, Silverstein MD, Mohr DN, Melton LJ III. Relative impact of risk factors for deep vein thrombosis and pulmonary embolism: A population-based study, Arch Intern Med. 2002. 162: 1245-1248.
8. Anand SS, Yusuf S, Pogue J, Ginsberg JS, Hirsh J. Relationship of activated partial thromboplastin time to coronary events and bleeding in patients with acute coronary syndromes who receive heparin, Circulation. 2003. 107(23): 2884-2888.
9. Van Dongen CJ, van den Belt AG, Prins MH, Lensing AW. Fixed dose subcutaneous low

molecular weight heparins versus adjusted dose unfractionated heparin for venous thromboembolism, Cochrane Database Syst Rev. 2004. (4): CD001100.
10. Hirsh J et al Heparin and Low-Molecular-Weight Heparin Mechanisms of Action, Pharmacokinetics, Dosing, Monitoring, Efficacy, and Safety Chest. 2001; 119:64S-94S.
11. U. K. Franzeck, I Schlch. K.A. Jager, E. Scheneider, J. Grimm, A. Bollinger Prospective 12 year study of clinical and hemodynamic sequel after deep vein thrombosis in low risk patients.