



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1225504>Available online at: <http://www.iajps.com>

Research Article

**INCIDENCE OF DEEP VEIN THROMBOSIS IN CONGESTIVE
HEART FAILURE PATIENTS HOSPITALIZED FOR NON
INVASIVE PROCEDURES*****¹Dr. Erum Javed, ²Dr. Muhammad Hammad Khalid, ³Dr. Unsa Ghafoor**¹B-87656-P, Lahore General Hospital²B-90162-P, Lahore general Hospital³PMDC #B-87826-P, Lahore General Hospital**Abstract:**

OBJECTIVE: The aim of this study was to calculate the frequency of DVT in patients admitted to hospital with CHF, because DVT data in limit was obtained in Pakistani patients with CHF. In deep vein thrombosis (DVT) according to international guidelines for the treatment and prevention of DVT Congestive heart failure (CHF) is one of the major factor.

Methods: This is a prospective, epidemiological study in 44 patients hospitalized for extensive surgery. Patients included in the study had DVT risk factors as per given guidelines, acute exacerbation of congestive heart failure, at least 4 days of bed rest, and over 60 years of age. Patients who received physical prophylaxis or antiplatelet drug therapy, except for patients receiving anticoagulants, were included. We excluded patients surgically or surgically injured in patients with a significant DVT history 3 months after admission to the hospital or clinically or hospital. In eligible patients, the presence of DVT was confirmed by images and ultrasonography were diagnosed by an central independent evaluation committee.

Place and Duration: The study was conducted from January 2016 to January 2017 for one year at the Department of Cardiology in Multan was held at the Chaudhary Pervaiz Elahi Institute of Cardiology (CPEIC).

Findings: A total of 44 patients, 19 male and 25 female, were included in the study. The average age was 80.0 ± 10.0 years and bed rest mean time was 9 ± 3.0 days. DVT was detected in 15 of these 44 patients (34%). Physical prophylaxis was performed in eight patients, but in two patients DVT was again detected. In addition, the remaining 12 patients received antiplatelet agent therapy and DVT was observed in 3 patients.

Corresponding author:**Dr. Erum Javed,**

B-87656-P,

Lahore General Hospital.

QR code



Please cite this article in press Erum Javed et al., **Incidence of Deep Vein Thrombosis in Congestive Heart Failure Patients Hospitalized For Non Invasive Procedures**, Indo Am. J. P. Sci, 2018; 05(04).

INTRODUCTION:

In Pakistan, the deep vein thrombosis (DVT) incidence was considered low than abroad. However, fresh reports assume that the DVT prevalence in Pakistan is equals to that of the Westerners. The incidence of DVT in knee replacement arthroplasties in postoperative hip prosthesis is 27.4% and 50.0%, respectively. The frequency of hip replacement surgery in Westerner is 42-57% and 42-86% for replacement of knee arthroplasty. Although the incidence of venous thromboembolism in a given population of patients in practice of medicine is greater than in mild and moderate-risk surgical cases, there is a large difference in reported cases. In some studies outside Pakistan, it has been reported that the incidence of DVT is generally 10-26% of hospitalized patients especially in CHF patients. Nicolaides et al reported that incidence approached up to 40%. These studies confirm approaches prevention of VTE in primary stages has been implemented in the USA for more than 20 years. America and Europe. At this time, the need for VTE prevention is vastly known not only for patients post-operatively, but in addition for patients who are hospitalized in medical daily practice.

Present international prevention guidelines recommend prevention at primary stage for some internal specific diseases, which include congestive heart failure. The NYHA class is associated with a high risk of VTE in high-risk patients, particularly in Pakistan, for NYHA class IV. The fact that CHF has NYHA III or IV is the aim of the prevention guide for prevention primarily currently. However, as noted in the introduction of the prevention guide, there are small-scale and very limited studies to clarify the true incidence of DVT in patients who are not admitted for invasive surgeries in Pakistan. We aim to calculate the DVT frequency in Pakistani patients with congestive heart failure because it is not yet clear whether there is any benefit in the prevention and treatment of patients hospitalized for DVT. After

receiving the patient's IQ, DVT presence was checked using a ultrasonography (US) of lower extremity and the data were collected accordingly.

MATERIALS AND METHODS:

The patient was enrolled for the first time, the protocol was assessed and approved by the Ethics Committee (EC) of the Department. The researcher has signed the patient's purpose and informed consent form (IC) with each patient prior to any study procedure that revealed the study methods of patients who received them. The study was carried out completely following the latest version of SPSS 10.0. This is a prospective study to know the incidence of DVT in patients with non-surgical procedures. Patients were admitted to the hospital for high-risk screening, such as VTE arrest, according to a combination of risk factors in the prevention guideline. ICC (NYHA class III or IV, cardiac output) (a) is a 4 day and narrower segment, (b) bed rest, and (c) 60 or more. (C) (a) injury or surgery, (b) or any clinically significant previous DVT hospital and any anticoagulant treatment within 3 months. Patients are diagnosed with congestive heart failure and heart disease (vascular disorders, myocardial disease, coronary artery disease, atrioventricular block, atrial fibrillation, hypertensive cardiovascular disease and other diseases). See the criteria in our definition of Framingham. We searched NYHA functional heart failure severity, but we searched for complex clinical conditions such as left ventricular dimensions, central venous pressure, brain natriuretic peptide level and left ventricular ejection fraction. For this reason, the use of the NYHA classification for the DVT view was assessed based solely on the severity of heart failure.

Data collection: Demographic variables, general clinical history, lifestyle variables, current medical status, physical examination, UltraSonography lower extremity, and laboratory tests (Table 1).

Table 1

Characteristics of patients with congestive heart failure (hospitalized).

Continuous parameters	N	Mean (SD)
Age (years)	44	79.1 (10.6)
Body weight (kg)	44	53.3 (16.2)
BMI (kg/m ²)	44	22.5 (6.4)
Systolic blood pressure (mmHg)	44	124.8 (22.5)
Diastolic blood pressure (mmHg)	44	67.4 (16.7)
Duration of rest (days)	44	8.9 (5-16) ^b
Categorical parameters	N	%
Gender: male/female	19/25	43.2/56.8
Smoking history (male): yes (current or past)/no	9/10	47.4/52.6
Smoking history (female): yes (current or past)/no	2/23	8.0/92.0
Drinking habit (male): yes (current and past)/no	11/8	57.9/42.1
Drinking habit (female): yes (current and past)/no	1/24	4.0/96.0
Fitness habit (male): yes (current and past)/no	2/17	10.5/89.5
Fitness habit (female): yes (current and past)/no	8/17	32.0/68.0
Catheterization within last 3 months: yes/no	11/33	25.0/75.0
Basic disease	44	100.0

DVT diagnosis: CT scans using techniques of imaging which include magnetic resonance venography, UltraSonic venography and i.v contrast DVE. These include U.S Noninvasive and diagnosis criteria of lower extremity DVT have been standardized. By the American Civil Medical Association in 2014. For this reason, we believe that we are familiar with energy efficiency. UU., Repeatable and reliable. The diagnostic procedure for medical researchers and technology specialists took place before the training session began. Ultrasonography and symptomatic diagnosis were performed at the 7th day and at 2 weeks of the bed ridden patient's.

The patient's symptoms and signs were then suspected and the DVT test was performed. The test part of the United States is the lower extremity, the base of the vein's foot; Pulmonary thromboembolism was not assessed in this research. Again old thrombi and diagnosis (soft glasses (stenosis (obstruction or stenosis) and tension (swollen or extract), (independent or fixed) variables, regression (no / medium or severe severity), consistency, acute disorders (low or high), homogeneity, moderate or high thrombus perfusion (wholly or partially)), or appropriate thrombus flat or irregular recanalization (low or no) of the lower extremity evaluators Ultra

ultrasonography was sent to the central committee of evaluation to identify DVT on presence based on these homogenous information and images.

RESULTS:

The study started in January 2016 (first patient was taken) and January 2017 (last patient was taken) and Chaudhary Pervaiz Elahi Institute Cardiology (CPEIC), Multan.

44 patients were included in the study, including the average male and 25 female and 14-NYHA III-IV NYHA and 30 (Table 1) and 79.1 ± 10.6 years. No patients were detected early or from the data analysis. atrioventricular block (n = 0 4), atrial fibrillation (n = 05), hyperintense cardiovascular disease = 02) and others (n = 04). The most common symptom in patients was orthopneus, jugular ven, ral heart growth.

DVT, congestive heart failure, and 95.1% of the patients had reliable 20.1%, 48.1% and 34.1% (15/44) patients, respectively. There was no significant statistically difference between TVP +ve clinical features (n = 14) and -ve (n = 28). Details of the patients characteristics classified according to the absence or presence of DVT is given in Table 2.

Table 2

Characteristics of patients with congestive heart failure classified by the presence or absence of deep vein thrombosis (DVT).

	DVT (+) (n=15)	DVT (-) (n=29)	p value ^a
Male	6 (40.0%)	13 (44.8%)	1.000
Female	9 (60.0%)	16 (55.2%)	
Age (years)	75.1 ± 9.3 ^b	81.1 ± 10.8	0.078
Age ≥75 years	9 (60.0%)	21 (72.4%)	0.501
Body weight (kg)	50.4 ± 14.4	54.7 ± 17.2	0.410
BMI (kg/m ²)	21.4 ± 6.4	23.1 ± 6.4	0.404
BMI ≥25 kg/m ²	3 (20.0%)	6 (20.7%)	1.000
Systolic blood pressure (mmHg)	127.2 ± 26.1	123.6 ± 20.8	0.619
Diastolic blood pressure (mmHg)	66.5 ± 12.1	67.8 ± 18.8	0.801
Duration of rest (days)	9.1 ± 3.2	8.789 ± 3.2	0.792
Smoking history (male): yes	3 (20.0%)	6 (20.7%)	1.000
Smoking history (female): yes	1 (6.7%)	1 (3.4%)	1.000
Drinking habit (male): yes	4 (26.7%)	7 (24.1%)	1.000
Drinking habit (female): yes	1 (6.7%)	0 (0.0%)	0.360
Fitness habit: yes	4 (26.7%)	6 (20.7%)	0.714
Catheterization within last 3 months: yes	4 (26.7%)	7 (24.1%)	1.000
NYHA III	7 (46.7%)	7 (24.1%)	0.177
NYHA IV	8 (53.3%)	22 (75.9%)	
Concomitant diseases			
Malignancy	2 (13.3%)	5 (17.2%)	1.000
Chemotherapy for malignancy	1 (6.7%)	2 (6.9%)	1.000
Diabetes	2 (13.3%)	6 (20.7%)	0.695
Dyslipidemia	2 (13.3%)	9 (31.0%)	0.282
Hyperuricemia	6 (40.0%)	13 (44.8%)	1.000
Paralysis	0 (0.0%)	4 (13.8%)	0.282
Hypertension	10 (66.7%)	24 (82.8%)	0.271
Angina pectoris	4 (26.7%)	7 (24.1%)	1.000
Myocardial infarction	4 (26.7%)	2 (6.9%)	0.159
Thrombophilia	1 (6.7%)	0 (0.0%)	0.341
Arrhythmia	5 (33.3%)	16 (55.2%)	0.102
Heart failure	15 (100%)	29 (100%)	-
Stroke	2 (13.3%)	5 (17.2%)	1.000
Aortic aneurysm	1 (6.7%)	2 (6.9%)	1.000
Varicose vein	0 (0.0%)	0 (0.0%)	-
COPD	2 (13.3%)	1 (3.4%)	0.264

The main results of comparing the incidence of the key parameters are shown in Table 3. (25%) with physical prophylaxis was observed in 8 (25%) indole DVT. Patients using antiplatelet agents in 12 patients. The group with positive DVT had a lower mean age (81.1 ± 10.8 years vs. 75.1 ± 9.3 years, p = 0.078)

than the group with negative mean DVT, but no significant difference.), 19 male patients (32%) and 9 female patients (36%) had DVT. Subgroup analysis of the NYHA class did not reveal any differences in the development of DVT (IV versus III).

Table 3
Results of comparison on prevalence of deep vein thrombosis (DVT) for important parameters.

Categorical parameters			
Parameter	Classification	DVT prevalence (%)	p value ^a
Gender	Male	6/19 (31.6)	1.000
	Female	9/25 (36.0)	
Age (years)	<75	6/14 (42.9)	0.501
	≥75	9/30 (30.0)	
BMI (kg/m ²)	<25	12/35 (34.3)	1.000
	≥25	3/9 (33.3)	
Catheterization within last 3 months	Yes	4/11 (36.4)	1.000
	No	11/33 (33.3)	
NYHA classification	Class III	7/14 (50.0)	0.177
	Class IV	8/30 (26.7)	
Physical prevention	Yes	2/8 (25.0)	0.695
	No	13/36 (36.1)	
Antiplatelet agent	Yes	3/12 (25.0)	0.500
	No	12/32 (37.5)	
Concomitant diseases of malignancy	Yes	2/7 (28.6)	1.000
	No	13/37 (35.1)	
Continuous parameters (mean ± SD)			
Parameter	DVT (+) (n = 15)	DVT (-) (n = 29)	p value ^b
Age (years)	75.1 ± 9.3	81.1 ± 10.8	0.078
BMI (kg/m ²)	21.4 ± 6.4	23.1 ± 6.4	0.404
Body weight (kg)	50.4 ± 14.4	54.7 ± 17.2	0.410
Systolic blood pressure (mmHg)	127.2 ± 26.1	123.6 ± 20.8	0.619
Diastolic blood pressure (mmHg)	66.5 ± 12.1	67.8 ± 18.8	0.801
Duration of rest (days)	9.1 ± 3.2	8.8 ± 3.2	0.792

A DVT v status of 16 patients with DVT positive is given in Table 4. There were three symptomatic (20%) and 3 proximal (20%) (including popliteus 15 positive DVT types. In 11 (25%) new and old thromboses a new thrombus formation was detected, including three. Three patients were treated:

12 asymptomatic and two symptomatic patients were symptomatic with nonfractionated warfarin and heparin and 3 with nonfractionated heparin patients with DVT were assessed 2 days after the D-dimer of the United States and the standard cut-off value of D-dimer noted higher than the in all samples.

Table 4
Summary of deep vein thrombosis (DVT) conditions of 15 DVT positive patients with congestive heart failure.

No.	Location of thrombus	New or old thrombus	Symptoms	D-dimer value (µg/ml)	Treatment
1	Proximal	Old only	None	9.20	None
2	Proximal	Old only	None	5.6	None
3	Proximal	New only	None	19.90	None
4	Distal	Old only	None	1.43	None
5	Distal	Old only	None	7.10	None
6	Distal	New only	None	8.39	None
7	Distal	New only	None	Unmeasured	None
8	Distal	New only	None	2.36	None
9	Distal	New only	None	3.1*	None
10	Distal	New only	None	5.1*	None
11	Distal	New and old	None	15.48	Unfractionated heparin
12	Distal	New only	None	3.5	Warfarin
13	Distal	New and old	Edematous lower limbs, fatigue	15.44	None
14	Distal	New and old	Swollen lower limb	2.79	None
15	Distal	New only	Swollen lower limb, edema, pleural effusion, peritoneal effusion	5.38	Unfractionated heparin

DISCUSSION:

This is a prospective, multicenter epidemiological study aimed at estimating the incidence of DVT in patients in a non-surgical hospital and 40% in patients with congestive heart failure. During the use of the USA, one or more thrombi per week may be detected as elderly, while a thrombus formed within about 1 week can be redefined, and thus the majority of the newly formed thrombus is EE. U. For this study, recruitment may have occurred after bed rest. In addition, some patients have developed DVT treated with physical prophylaxis or antiplatelet drugs. Nose et al. Reported that the rate of popliteal venous flow in the CHF group was significantly lower than the control group in the cricoid state, suggesting that patients with CHF have potential risks associated with DVT. Our findings suggest that an additional approach, including the use of anticoagulants, should be considered to prevent patients with non-surgical hospitalization in non-surgical patients by following DVT prevention guidelines.

In this study, the majority of newly formed DVT patients did not receive any treatment. Ten of the 11 patients with new thrombus had a distal venous thrombus. The other patient with a new thrombus had a proximal venous thrombus, but the proximal extremity was asymptomatic popliteal ven. Based on these conditions of DVT patients, the doctors did not immediately decide on medical intervention. The guidelines of the American College of Chest Diseases (ACCP) recommend regular follow-up of DVT in patients with isolated acute DVT and who do not have severe symptoms without prolonged risk factors for anticoagulant therapy.

Another limitation of this study would be the CHF profile alone with the NYHA classification. Additional studies involving objective indices including brain natriuretic peptides, ejection fraction, and left ventricular end-diastolic dimensions and additional studies involving ICC profiles and examining the relationship between objective rates and DVT formation may provide additional information.

As a result, the DVT frequency (34.1%) among Pakistani patients hospitalized in Pakistan is similar to that of Westerners and at the same time postoperative disease (27.4-50.0%) in orthopedic surgery in Pakistan is similar. This study showed that patients with congestive heart failure in hospitalized patients had a high risk for DVT and therefore could be considered as a potential benefit in the prevention and treatment of DVT according to the guidelines.

REFERENCES:

1. Alaskar FA, Albahili FK, Hussain MA, Khurfan BW. Acute Lower Limb Deep Venous Thrombosis Diagnosed by Doppler Ultrasound among Bedridden Patients. *Egyptian Journal of Hospital Medicine*. 2018 Feb 16;70(10).
2. Li Z, Zhou X, Cao J, Li Z, Wan X, Li J, Jiao J, Liu G, Liu Y, Li F, Song B. Nurses' knowledge and attitudes regarding major immobility complications among bedridden patients: a prospective multicentre study. *Journal of clinical nursing*. 2018 Mar 15.
3. Pawar SA, Chaudhari T, Giri S. Stage of involvement, type of occlusion, pattern of involvement of thrombi with evidence of DVT on Doppler Ultrasonography. *PARIPEX-INDIAN JOURNAL OF RESEARCH*. 2018 Feb 14;6(3).
4. Fong B, Novak D, Dalley M, Alfred G. Bilateral Phlegmasia Cerulea Dolens After Warfarin Reversal for Acute Rectal Bleeding: A Case Report. *The Journal of emergency medicine*. 2018 Feb 12.
5. Pawar SA, Chaudhari T, Giri S. Clinical spectrum of findings in deep venous thrombosis of lower limbs referred for color Doppler ultrasound. *INDIAN JOURNAL OF APPLIED RESEARCH*. 2018 Feb 15;7(2).
6. Alper EC, Ip IK, Balthazar P, Piazza G, Goldhaber SZ, Benson CB, Lacson R, Khorasani R. Risk Stratification Model: Lower-Extremity Ultrasonography for Hospitalized Patients with Suspected Deep Vein Thrombosis. *Journal of general internal medicine*. 2018 Jan 1;33(1):21-5.
7. Kaur U, Chakrabarti SS, Manna S, Gambhir IS. Severe haematuria of lower urinary tract origin with low dose dabigatran use in three Indian elderly patients: unresolved issues in the safety of novel oral anticoagulants. *Therapeutic advances in drug safety*. 2018 Jan;9(1):89-91.
8. Osman AA, Ju W, Sun D, Qi B. Deep venous thrombosis: a literature review. *Int J Clin Exp Med*. 2018;11(3):1551-61.
9. Farina A, Imberti D, Alonzi A, Cecchi R. Thromboprophylaxis with nadroparin in the orthopaedic setting, a brief appraisal of the recent literature. *Medical Research Archives*. 2018 Feb 15;6(2).
10. Fukazawa, Kyota, Ernesto A. Pretto, Seigo Nishida, Jorge D. Reyes, and Edward Gologorsky. "Factors associated with mortality within 24 h of liver transplantation: An updated analysis of 65,308 adult liver transplant recipients between 2002 and 2013." *Journal of clinical anesthesia* 44 (2018): 35-40.

11. Sieke EH, Rome ES. Case of a Girl with Special Needs Seeking Menstrual Management. In Adolescent Gynecology 2018 (pp. 235-250). Springer, Cham.
12. Gatot, D. and Mardia, A.I., 2018, March. Differences of wells scores accuracy, caprini

scores and padua scores in deep vein thrombosis diagnosis. In *IOP Conference Series: Earth and Environmental Science* (Vol. 125, No. 1, p. 012131). IOP Publishing.