

Incidence of deep Vein Thrombosis in elderly fracture neck of femur patients with prophylactic anticoagulation

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Abstract

Introduction: Vein Thrombosis is a major national health problem that takes a significant toll of lives and creates major disabilities.

Objective: Incidence of Deep Vein Thrombosis in elderly fracture neck of femur patients with prophylactic anticoagulation.

Materials and Method: This study was conducted in the out-patient and emergency Department of Orthopaedics, Yashoda Superspeciality Hospital, Malakpet, Hyderabad. Aged more than 60 years, during the period from May 2010 to August 2011 was included in this study.

Results: Forty patients with fracture of hip were selected. Patients in 60-70 years age group were 27(67.5%), 70-80 years age's were 11(27.5%) and >80 years were 2(5%). Out of 40 patients 23 (57.5%) had fracture neck femur and 17(42.5%) intertrochanteric fracture. out of 40 patients who received thromboprophylaxis 8 had DVT.

Conclusion: Incidence of deep vein thrombosis in hip fracture patients is high and require thromboprophylaxis.

Keywords: Deep vein thrombosis, Fracture neck femur, Intertrochanteric fracture, Thromboprophylaxis

Introduction

Deep vein thrombosis is a highly morbid condition that prolongs hospitalisation, increases cost and is associated with long term sequelae such as venous insufficiency and post phlebitic syndrome which occur in 30 – 50% patients.⁽¹⁾

A clot may get dislodged and impair circulation in pulmonary arteries by embolisation creating pulmonary embolisms a potentially lethal complication. Proximal lower extremity DVT are probably the source of majority of PES. PE have been discovered in 31.7% surgical patients brought to autopsy and it was considered to be a absolute or contributing cause of death in 55.5% of these cases.⁽²⁾

In orthopaedics DVT develops mostly after THR, TKR, PELVIS and Acetabulum fractures. Incidence is high in hip fractures and polytrauma patients. DVT can be diagnosed by clinical methods but this is rare and not fully reliable.⁽³⁾ Now a days colour Doppler MRV are highly specific test available to diagnose DVT. Venography still the gold standard method.⁽¹⁾

Critical evaluation of the existing evidence is necessary to identify valid methods of managing VT and uncover the area in which knowledge is limited or anecdotal, with the hope that my research study will provide some more definitive answers.⁽⁴⁾ The objective of present study was To study the incidence of DVT in elderly fracture neck of femur patients with prophylactic anticoagulation.

Materials and Method

Following ethics committee approval 40 patients admitted with fracture neck femur in Yashoda Superspeciality Hospital, Malakpet, Hyderabad. Aged

more than 60 years, during the period from May 2010 to August 2011 was included in this study.

All the patients are thoroughly explained regarding nature of study, written informed consent taken and then included in the study. In our study fracture neck femur includes both intracapsular and extra capsular fracture neck femur patients.

Inclusion criteria: Patients with fracture neck of femur aged more than 60 years and both sex.

Exclusion criteria: 1. Patients with fracture neck of femur younger than 60 years.

2. Patient with polytrauma.

3. Patients with previous history of DVT 4. Noncompliant patients.

According to our protocol all patient on admission were started with prophylactic anticoagulation with injection enoxaparin s.c. 40mg once daily within 24 hours of admission and continue for 2 weeks. We followed ACCP recommendations for DVT prophylaxis in hip fracture patients.

This is withheld 12 hours before surgery and started 12 hours after surgery. Colour Doppler USG was performed on 1st day on admission, 5th and 14th post operative day.

In some patients those who discharged before or near 14th post operative day we did investigation on 12th and 13th day also, but those who got discharged. Early we called them back on 14th day for colour Doppler.

All patients on admission were thoroughly evaluated, major surgical profile send, physicians and cardiology fitness for surgery taken and were posted for surgery next day. Serial colour Doppler done as per protocol.

Major surgical profile includes complete blood picture, blood urea, serum creatinine, blood sugar,

serum electrolytes, blood group and Rh factor, ECG chest x ray, HIV, HBsAg, HCV, urine routine, BT, CT, PT, aPTT. 2D-echo was done as per cardiologist advice. Serial colour Doppler findings and other parameters were recorded using standard proforma as mentioned in next section.

Data and results so obtained were tabulated and analysed using Microsoft excel spread sheet, software of MS OFFICE 2007.

Results

Out of forty patients admitted with hip fracture in yashoda super specialty hospital, malakpet, Hyderabad, twenty seven (67.5%) cases were between 60 -70 years. Eleven cases were in the age group of 71-80 years. Only two cases were more than 80 years. Table 1

Table 1: Age of cases in our study

Age (Years)	Number of cases	Percentage
60-70	27	67.5%
71-80	11	27.5%
Age >80	2	5%
Total	40	100%

Most of the cases (57.5%) of hip fracture were fracture neck of femur and rest (42.5%) was intertrochanteric fracture. Table 2

Table 2: Incidence of hip fractures

Type of fracture	No of cases	Percentage
Fracture neck femur	23	57.5%
Intertrochanteric fracture	17	42.5%
Total	40	100%

Incidence of deep vein thrombosis among cases of fracture neck femur was 26.08 percent. Whereas out of seventeen cases of intertrochanteric fracture only two cases (11.76%) had deep vein thrombosis. Table 3

Table 3: Incidence of deep vein thrombosis in hip fractures

	No of cases	DVT positive	Percentage
Fracture neck femur	23	6	26.08%
Intertrochanteric fracture	17	2	11.76%

Only eight cases were found deep vein thrombosis with thromboprophylaxis out of forty cases of hip fracture. Table 4

Table 4: Incidence of DVT in our study with thromboprophylaxis

Total no of cases	DVT positive	Percentage
40	8	20%

Discussion

In the present study, number of patients in 60-70 years age group were 27(67.5%), 70-80 years age were 11(27.5%) and >80 years were 2(5%). Similar study done by Agarwala S *et al*,⁽¹⁾ the mean age group was 65 years. Study done by Bhagwat A S⁽⁵⁾ *et al*, the mean age group in study was 58yrs. Study done by Ashutosh P M⁽⁶⁾ *et al*, the mean age group was 60 years. Study done by Sharma H⁽²⁾ *et al*, mean age was 60 years. Study done by Rajagopalan N⁽⁷⁾ *et al* mean age in their study was 58 years. All above studies show that DVT is more common in elderly patients.

In this present study out of 40 patients 23 (57.5%) had fracture neck femur and 17(42.5%) intertrochanteric fracture. Similar study done by Agrawala S *et al*,⁽¹⁾ out of 104 patients, 48(46.1%) TKR, 37(35.6%) THR and 19(18.3%) had proximal femur fixation. Study done by Dhillon K S⁽⁴⁾ *et al*, out of 88 patients, 34 had TKR, 14 THR and 40 patients had fracture neck femur. Study done by Bhagwat A S *et al*⁽⁵⁾ out of 90 patients, 61 had TKR, 27 THR and 12 fracture neck femur. Study done by Ashutosh P M *et al*⁽⁶⁾ 57 had TKR, 11 THR and 26 patients had fracture neck femur.

In the present study, out of 40 patients who received thromboprophylaxis 8 had DVT. The incidence of DVT in hip fracture patients with thromoboprophylaxis by this study is 20%, of which 6(26.08%) patients had fracture neck femur and 2(11.76%) had intertrochanteric fracture. In the present study thromoboprophylaxis with enoxaparin was used in all patients and colour Doppler was used as a modality for detection of DVT.

Similar study done by Agarwala S *et al*,⁽¹⁾ out of 44 patients who received thromboprophylaxis with dalteheparin sodium 19 patients developed DVT, the incidence of DVT in this study with thromoboprophylaxis was 43.2%, of which 3(23.1%) patients had THR, 11(55%) TKR and 5(45.5%) had proximal femoral fracture. In this study the incidence of DVT with no thromboprophylaxis was 60%. The group which received thromoboprophylaxis had statistically lower incidence of DVT then the group which did not receive. In his study venogram was used as modality for detecting DVT.

Similar study done by Dhillon *et al*⁽⁴⁾ reported the incidence of DVT as also 62.5% with no thromoboprophylaxis. Out of 88 patients 55(62.5%) developed DVT. Of which 26(76.5%) patients had TKR, 9(14%) THR and 20(50%) had fracture neck femur. In this study venogram was used as a modality to detect DVT.

Similar study done by Bhagwat A S⁽⁵⁾ et al reported the incidence of DVT as 34% with thromboprophylaxis. Out of 90 patients, 31(34%) had DVT. Dalteparin sodium (5000iu) was used as prophylactic agent and CCDS was used as a modality to detect DVT.

Study done by Sharma H⁽³⁾ et al reported the incidence of DVT as 19.6% without thromboprophylaxis. Out of 112 patients, 22(19.6%) developed DVT. Colour Doppler was used as a modality to diagnose DVT.

Study done by Nagi O N⁽⁸⁾ et al reported the incidence of DVT as 8% without thromboprophylaxis. Out of 50 patients studied, 4(8%) developed DVT. Compression ultrasonography was used as a modality to diagnose DVT.

Study done by Ashutosh M P⁽⁶⁾ et al reported the incidence of DVT as 7.2% without thromboprophylaxis. Out of 125 patients 9(7.2%) developed DVT. Colour Doppler used as modality to diagnose DVT.

Study done by Rajagopalan N⁽⁷⁾ et al reported the incidence of DVT as 7.8% with thromboprophylaxis. Out of 102 patients 8 developed DVT. Dalteparin sodium(5000iu) was used as a thromboprophylactic agent. Colour Doppler was used as a modality to diagnose DVT.

Study done by V. Jain et al⁽⁹⁾ reported low incidence of DVT even without thromboprophylaxis. In their prospective study, 60 had THR and 46 had TKR, out of which only 2 patients developed DVT. In this study colour Doppler was used as a modality to diagnose DVT.

Conclusion

It was concluded that incidence of DVT in hip fracture patients is high and require thromboprophylaxis. Doppler USG is very easy convenient and reliable screening method. Low molecular weight Heparin drugs are better in preventing deep vein thrombosis with very less complications. Elderly fracture neck femur patients are special patients governed by separate physiological insults and many co morbid conditions. They require specific treatment protocols. The incidence of DVT in fracture neck of femur patients even in India is high hence thromboprophylaxis is essential.

References

1. Agarwala S, Bhagwat A, Modhe J, Dastur F D, Patil S. Incidence of deep vein thrombosis in Indian patients. A prospective study in 104 patients. Indian J orthop 2003;37:5.
2. Bhan S, Dhaon B K, Gulati Y, Aggarwal S. Deep venous thrombosis prophylaxis- A multicentric study. Indian J Orthop 2004;38:178-82.
3. Sharma H, Maini L, Agarwala N, V Padhyay A, Vishwanth J, Dhaon B K. Incidence of deep vein

4. Dhillion K S, Askander A, Doraisamy S. post operative deep venous thrombosis in Asian patients is not a rarity. A prospective study. J Bone Joint Surg[Br] 1999; 78-B:427-30.
5. Bhagwat A S, Wadhani R. Pre and post operative deep venous thrombosis in Indian patients – efficacy of LMWH as a prophylactic agent. Indian J Orthop 2005;39:55-8.
6. Ashutosh M P, Majmundar D, Rani S. Routine chemoprophylaxis for deep venous thrombosis in Indian patients: Is it really justified? Indian J Orthop 2007;41:188-93.
7. Rajagopalan N. thromboprophylaxis by dalteparin sodium in elective major surgery. A multicentric Indian study. Indian J Orthop 2003;37:4.
8. Nagi O N, Dhillion M S, Katariya S, Md Mujeeb S. Deep venous thrombosis after major surgery- evaluation by compression ultrasonography. Indian J Orthop 1999;33:200-203.
9. Jain V, Dhaon B K, Jaiswal A, Nigam V, Singla J. Deep venous thrombosis after total hip and knee arthroplasty in Indian patients. Post Grad Med J 2004;80:729-31.