ORIGINAL ARTICLE

Incidence of DVT and Practices of its Prophlaxis in Surgical Patients Being Treated at Allama Iqbal Memorial Teaching Hospital

ANSAR LATIF[1], ANILA ANSAR[2], AFTAB AHMAD[3], ASIF SAJJAD[4], MUHAMMAD HANEEF[5], HASSAIN ZIA[6]
[1]Associate Professor& HOD, Department of Surgery, Khawaja Muhammad Safdar Medical College, Sialkot.
[2]Associate Professor & HOD, Department of Gynae/Obs, Khawaja Muhammad Safdar Medical College, Sialkot.
[3]Assistant Professor Anatomy, M Islam Medical College, Gujranwala
[4]Assistant Professor Surgery, Khawaja Muhammad Safdar Medical College, Sialkot.
[5,6]PGR Surgery, Khawaja Muhammad Safdar Medical College, Sialkot.
Correspondence to Dr Ansar Latif Email: ansarlatif2013@gmail.com, Phone Number: +923217103994

ABSTRACT

Aim: To see the incidence of DVT, its presentation and prognosis in patients presenting in surgical department of Allama Iqbal Memorial Teaching hospital, Sialkot.
Study Design: Prospective study.
Place & duration of study: Dept of Surgery, Kh. M Safdar Medical College, Sialkot from June 2016 to Feb. 2019.
Methods: All patients serially presented in the OPD of surgery Department of Allama Iqbal Memorial hospital with DVT of lower limbs were included after definite diagnosis by Doppler studies of the lower limbs. Male and female patients of all age groups were included. The patients were classed in two groups: Group I- Patients with history of previous surgeries in Emergency while Group II- Patients who underwent Elective Surgery.
Results: In Group-I Emergency Surgery patients were 63.In Group-II Elective Surgery patients were 16. Fever was in 35%, Pain and heaviness in legs was in 62%, Swelling was in 61% and 3 patients reported with dyspnea and later on revealed pulmonary embolism. Group 1 includes those patients who underwent emergency surgery they were total 63 patients out which 18 patients were of general surgery department who presented with DVT. 44 patients were related to gynae and obstetric emergency and only there was 1 patient was who presented with DVT after orthopedic emergency surgery.
Conclusion: Deep venous thrombosis is a serious complication in postoperative patients which is more pronounced after Emergency surgeries. It causes morbidity and at times life threatening complications may lead to mortality. There is a dire need of DVT prophylaxis practices in high risk patients which is not yet given due importance especially in emergency surgeries.
Keywords: Deep venous thrombosis, Pulmonary embolism, swelling, Doppler studies

INTRODUCTION

Deep vein thrombosis (DVT) and pulmonary embolism (PE) are collectively known as venous thromboembolism (VTE).The incidence of venous thromboembolic events is 5 to 63% following trauma and are very common and occur as potentially life threatening complications. . Prophylaxis of DVT is necessary in the management of trauma patients. The optimal VTE prophylaxis strategy for trauma patients is not known currently. Prolonged immobilization, pelvic and lower limb fractures and head injury are considered as risk factors for VTE; but it is not clear that which combination of risk factors is considered as high-risk group. Various Modalities that are used as thromboprophylaxis in trauma patients include anticoagulation therapy, mechanical prophylaxis, and inferior vena cava (IVC) filters. The anticoagulant therapy include low-dose heparin (LDH), low molecular weight heparin (LMWH), and factor Xa inhibitors. Mechanical prophylaxis methods include graduated compression stockings (GCSs), pneumatic compression devices (PCDs), and A-V foot pumps. IVC filters are only used in those high risk patients in whom anticoagulation therapy is contraindicated.

According to a review of the general surgical literature the incidence of DVT can be reduced as much as 20% to 40% with a minidose prophylactic heparin. Low-dose heparin (LDH) in dose of 5,000 units given subcutaneously two or three times per day, represents one pharmacologic treatment modality for prophylaxis against DVT/PE. Subcutaneous heparin given three times per day may be as effective as standard-dose 30 mg bid enoxaparin for VTE prophylaxis without increased complications, and this was cost effective as well.

Low Molecular Weight Heparin (LMWH) are generated from the chemical depolymerization of unfractioned heparin (UH). This reduces their size, charge, and weight. Secondary to their smaller size, LMWHs have significantly greater activity towards factor Xa than UHs.

The optimal method of prophylaxis for DVT, found that rates of DVT and PE are lowered in trauma patients who are treated with LMWH was safe and effective for VTE prevention in complete motor paralysis and was superior to subcutaneous heparin. There is a controversy about the dose of LMWHs.

In severely injured high risk patients, VTE is a major cause of potentially preventable death despite many prophylactic measures particularly in those patients who have contraindications to receive a heparin drug.

Fondaparinux is a nonheparin drug .It the first synthetic pentasaccharide. It acts by selectively inhibiting Factor Xa, the safety of fondaparinux has been

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documented in several Phase II and III clinical trials because of its antithrombotic effect in preventing VTE after elective orthopaedic surgeries and in selected high-risk patients with abdominal surgeries. Complications were reduced due to its use as there were no episodes of pulmonary embolism, thrombocytopenia, or bleeding due to fondaparinux.

Graduated Compression Stockings (GCSs) are widely used in non-trauma patients for prevention as well as for treatment of DVT. Pneumatic Compression Devices (PCDs) are increasingly used in trauma patients for prophylaxis against DVT. Despite the fact that PCDs were effective in lowering incidence of DVT as compared to LDH their use compared with controls who were given no prophylaxis and despite the given same rate of DVT for clinically injured patients who were given prophylaxis with either Sequental Compression Device (SCD), LDH, or a combination of these.

No research regarding deep venous thrombosis regarding its presentations, incidence and its prophylaxis practices has been carried in our hospital previously. In the present study, we collected the data of our patients undergoing surgery and analyzed the incidence of comorbid pathologies in patients reporting to Allama Iqbal Memorial Teaching Hospital affiliated with Kh. Muhammad Safdar Medical College, Sialkot.

PATIENTS AND METHODS

All patients serially presented in the OPD of surgery Department of Allama Iqbal Memorial hospital with DVT (deep venous thrombosis) of lower limbs were included after definite diagnosis by Doppler studies of the lower limbs. Ethical approval was obtained from the institutional ethical board. Male and female patients of all age groups were included. The patients were classed in two groups: Group I- Patients with history of previous surgeries in Emergency while Group II- Patients who underwent Elective Surgery. Patients operated by the general surgeon, Gynaecologists and orthopedic surgeon were included. Patients were admitted and managed according to the set protocols of anticoagulation and its monitoring by Prothrombin time and international normalized ration. All risk factors were recorded and variables analysed. Minimum of three months of follow up was must for inclusion in the study. Data was entered and analysis done by SPSS v 22.

RESULTS

Table I: Presentation and risk factors

	Group I-	Group II	Total
General Surgery	18	5	23
Gynaecological & Obstetric Patients	44	8	52
Orthopedic Patients	1	3	4

Table II: Veins involved

Total patients	n	%age
Upto Poplitael Veins involved	13	16.45
Upto Femoral veins involved	49	62.02
Upto Internal Iliac veins involved	10	12.6

Table III: DVT prophylaxis

	n	DVT Prophylaxis given	%age
General Surgery	23	6	26.08
Gynaecological& Obstetric Patients	52	5	9.61
Orthopedic Patients	4	1	25

Table IV: Data of morbidity (n=79)

Skin changes/ulcers in leg	9	11.39%
Chronic pain in lower limb	23	29.11%
Persistent Swelling of leg	11	13.92%
Mortality	1	1.265%

DISCUSSION

Present study shows that out of 63 patients of emergency surgery that presented with DVT 18 were patients of general surgery 44 were related to gynaecological and obstetric emergency and 1 of orthopedic surgery.16 patients underwent elective surgery and developed DVT out of which 5 were of general surgery 8 of gynaecological and obstetric emergency and 3 of orthopedic surgery. Comparing present study with the other studies as by Ekeh AP et al[11] the incidence of DVT was more among emergency patients in surgery.

Out of 79 patients 13(16.45%) were those in which popliteal veins were involved 49(62.02%) in which femoral veins were involved and 10(12.6%) were those patients in which internal iliac veins were invoved. Similar study carried out by Raskob GE et al[12] showed no significant differences in incidence of type of veins involved.

In general surgery out of 23 only 6(26.08%) were given DVT prophylaxis,out of 52 patients 5(9.61%) were given DVT prophylaxis in gynaecological and obstetric emergency.In orthopedic surgery out of 4 1(25%) was given DVT prophylaxis. It was different from the study carried out among trauma patients in America by Arnold JD et al[13] in which incidence of DVT prophylaxis was 76(90%) among general surgery patients and 45(75%) among gynaecological patients.

The present study shows that chronic pain was present in 23(29.11%), skin changes were present in 9(11.39%) patients, swelling in 11(13.92%) patients and mortality in 1(1.265%) patient. The study carried out in India by Datta I et al[14]. shows same incidence of morbidity and mortality among patients due to DVT.

CONCLUSION

Deep venous thrombosis is a serious complication in postoperative patients which is more pronounced after Emergency surgeries. It causes morbidity and at times life threatening complications may lead to mortality. There is a dire need of DVT prophylaxis practices in high risk patients which is not yet given due importance especially in emergency surgeries.

Grey Areas: This study is a statistical analysis of patients reporting with DVT and having a factor of surgery in the recent past. Appropriate studies on DVT to probe into

predisposing fectors like obesity, metabolic disorders are required in our set up in order to formulate guidelines of its prophylaxis in our patients.

Disclosure: The authors have nothing to disclose.

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