FREQUENCY OF ANTIPHOSPHOLIPID SYNDROME IN DEEP VEIN THROMBOSIS

Omar Ahsan, *Imran Ahmed, **Mohammad Shabbir, ***Ijaz Ahmed

Pakistan Armed Forces Hospital Mianwali, *Combined Military Hospital Okara, **Armed Forces Institute of Cardiology Rawalpindi, ***Army Medical College Rawalpindi

ABSTRACT

***Objectives*:** To determine the frequency of antiphospholipid syndrome in patients of DVT.

***Study Design*:** Single center descriptive study.

Place and Duration: It was carried out at Military Hospital Rawalpindi, from May to Oct 2003.

***Subjects and Methods*:** Fifty patients of either sex with Deep vein thrombosis (DVT) legs, who were diagnosed clinically and later on confirmed on doppler ultrasound, were selected through non-probability convenience sampling. doppler ultrasound was done to diagnose DVT and antiphospholipid antibodies tested namely lupus anticoagulant and anticardiolipin antibodies. Other associated risk factors were also documented. Data collected and organised, descriptive statistics were applied to calculate the frequencies. The results were organised in graphs and tables.

Results: Out of 50 patients of DVT 38 (76%) were males and 12 (24%) were females. Mean age for males was 44.94±14.92 years whereas for females it was 27.66±5.97 years. Antiphospholipid syndrome was detected in 13(26%) patients; 11 (22%) were males and 2 (4%) females. Only lupus anticoagulant was detected in 9 (18%) patients. Anticardiolipin antibodies were detected in 3 (6%) patients. In 1 (2%) both lupus anticoagulant and anticardiolipin antibodies were detected.

***Conclusion*:** There is an association between antiphospholipid syndrome and DVT. Association of lupus anticoagulant is more, as compared to anticardiolipin antibodies with DVT. Additional risk factors make a person further susceptible to DVT.

Keywords: Antiphospholipid syndrome, deep vein thrombosis, lupus anticoagulant, anti cardiolipin antibodies

INTRODUCTION

Deep vein thrombosis (DVT) is a common but elusive illness that can result in suffering and fatal pulmonary thromboembolism (PTE) if not recognised and treated effectively.

True incidence of DVT for years been underrated because it is difficult to diagnose accurately by clinical history and physical examination. Minimal leg symptoms may be associated with extensive venous thrombosis whereas classic symptoms and signs of pain, tenderness, and swelling of the leg can be caused by non-thrombotic disorders. In patients without symptoms and signs of DVT, a PTE most often reveals the diagnosis; indeed, less than 20% of patients with proved PTE have clinical features compatible with venous thrombosis in the legs [1]. A recent study using colour Doppler imaging detected an unexpectedly high rate of DVT of 33% in patients in an intensive medical care unit; 48% of these cases were proximal leg thromboses [2].

Since venous thrombosis is difficult to recognise clinically, these hospitalised cases probably represent tip of the iceberg. Women are a prime target for PTE, being more often

Correspondence: Maj Omar Ahsan, Medical Specialist, PAF Hospita,l Mianwali
Email: omarahsan@hotmail.com
Receive 16 Dec 2006: Accepted 11 April 2007

affected than men Doppler Ultrasound not only confirms the diagnosis but also gives the extent of thrombosis and the veins involved [3, 4].

Abnormalities of blood flow or venous stasis normally occur after prolonged immobility or confinement to bed. Venous obstruction can arise from external compression by enlarged lymph nodes, bulky tumours, or intravascular compression by previous thromboses. Increased oestrogens at pharmacological levels, as seen with oral contraceptive pills [5] use and with hormone replacement therapy in postmenopausal women, have been associated with a threefold increased risk in the small initial risk of venous thromboembolism. Cancers, particularly adenocarcinomas and metastatic cancers, are also associated with increased venous thromboembolism. Indeed, on presentation, some idiopathic venous thromboembolisms have revealed occult cancers at follow up. Both oestrogens at pharmacological levels and cancer can also activate the clotting system.

A sensible approach to evaluating patients with an unexplained thrombosis is to look for the most common hereditary defects first. Activated protein C resistance (APC), Sticky platelet syndrome (SPS), Antithrombin III, Protein C & S deficiency, in addition to the most commonly acquired defects including Lupus anticoagulant and anticardiolipin antibody, which come in antiphospholipid syndrome (APS).

The antiphospholipid syndrome, first described in 1983, is now recognised as an important prothrombotic disorder associated with a specific group of antibodies. Its main clinical feature is thrombosis, both venous and arterial (especially recurrent cerebral ischaemic attacks). Other features include mild thrombocytopenia, chorea, heart valve disease, livedo reticularis, and, most commonly, recurrent pregnancy loss. The importance of the syndrome in general medicine, especially in vascular and neurological disease, is now acknowledged.

The objective of this study was to determine the frequencies of anti phospholipid antibodies in patients of deep vein thrombosis (DVT).

PATIENTS AND METHODS

This was a descriptive study carried out in the Department of Medicine in Military Hospital (MH) Rawalpindi. From May to October 2003.

Fifty adult patients of either sex with ultrasound doppler proven DVT were recruited in this study through non-probability convenient sampling.

Inclusion Criteria

- Male and female patients admitted in the hospital with DVT.
- DVT confirmed by Doppler Ultrasound.
- Age more than 18 yrs.

Exclusion Criteria

- Recent history of road traffic accident.
- Surgery on hip, pelvis or lower limbs.
- Patients < 18 yrs.
- Already diagnosed or treated cases of Antiphospholipid syndrome.

Risk factors present in the patients were documented especially exposure to high altitude > 10000 ft, oral contraceptive pills, pregnancy, puerperium, prolonged immobilization because of associated stroke etc. Antiphospholipid antibodies were checked namely, lupus anticoagulant activity and anticardiolipin antibodies.

Data Analysis

Data was entered into SPSS version 10.0. Descriptive statistics i.e mean + SD for numerical variables and frequency along with percentage for categorical variables were used to describe the data.

RESULTS

Out of 50 patients, 38 (76%) were males while 12 (24%) were females. Mean ages for males and females were 44.94+14.92 years (range 22-77 years) and 27.66 + 5.97 years (range 20-40 years) respectively, Right and left legs were involved in 54% and 44% patients respectively while one patient (2%) had bilateral DVT (Table-1). Antiphospholipid antibodies were detected in 13 (26%) cases; 11 (22%) males and 02 (4%) females (Fig-1). Nine (18%) patients had lupus anti coagulant activity, three (6%) had anticardiolipin antibodies, while only one patient (2%) had both lupus anticoagulant and anti cardiolipin antibodies (Table-2). Among 50 patients of DVT, known risk factors were present in 45 (90%) patients (Table-3). Relative frequencies of these factors were; age above 40 (42%), high altitude > 10000 ft (18%), immobilization (8%), oral contraceptives (8%), antithrombin deficiency (4%), pregnancy (4%), protein C deficiency (2%), and protein S deficiency (2%). Among 13 patients with antiphospholipid antibodies, these risk factors were detected in 6 (46%) patients (Fig-2).In them, major risk factors were high altitude seen in 4 patients, while one patient had antithrombin deficiency and another was immobilized due to stroke.

Table-1: Gender wise distribution of right and left sided DVT (n=50).

Sex	Right	Left	Bilateral
Male	18 (36%)	20 (40%)	Nil
Female	9 (18%)	2 (4%)	1(2%)
Total	27 (54%)	22 (44%)	1 (2%)

Table-2: Gender distribution of lupus anticoagulant activity and anti cardiolipin antibodies (n=50).

Sex	LA	ACAB	LA + ACAB
Males	8 (16%)	2 (4%)	1 (2%)
Females	1 (2%)	1 (2%)	0
Total	9 (18%)	3 (6%)	1(2%)

LA: Lupus anticoagulant ACAB: Anticardiolipin antibodies

Table-3: Risk factors (n=50).

Risk Factors	Patients
Age > 40 yrs	21 (42%)
Anti Thrombin Deficiency	2 (4%)
Protein C Deficiency	1 (2%)
Protein S Deficiency	1 (2%)
High Altitude	9 (18%)
Immobilization	4 (8%)
Oral Contraceptives	4 (8%)
Pregnancy	2 (4%)
Puerpuerium	1 (2%)
Total	45 (90%)

DISCUSSION

Detection of antiphospholipid antibodies in patients with DVT is important, as these patients need life long anti coagulation [6]. In our study, male to female ratio was 19:6, which is higher than quoted in study by Brenner et al [7], where it was 6:10. The major reason for this discrepancy is that our study is biased towards males, as majority of our patients are male soldiers. In our study, mean age for males is high as compared to females. This is because; our male soldiers remained entitled for treatment even after their retirement, while their families had to seek treatment from civil hospitals. In study conducted by Windyga et al [8], frequency of anti phospholipid antibodies was 8.7%, as compared to our frequency of 26%. Moreover, finding of higher frequency of lupus anticoagulant as compared to anticardiolipin antibodies our study is in line with the findings in studies by Windyga et al [8], Ginsberg et al [9] and Kinuya et al [10].

CONCLUSION

Antiphospholipid antibodies mainly lupus anticoagulant are detected in majority of patients with DVT.

REFERENCES

1. Hull RD, Hirsh J, Carter CJ, Jay RM, Dodd PE, Ockelford PA, et al. Pulmonary angiography, ventilation lung scanning and venography for clinically suspected pulmonary embolism with abnormal perfusion lung scan. Ann Intern Med 1983; 98; 891-8
2. Hirsh DR, Ingenito EP, Goldhaber SZ. Prevalence of deep venous thrombosis among patients in medical intensive care. JAMA 1995; 274:335-7
3. Heijboer H, Buller HR, Lensing AWA, Turpie AGG, Colly LP, Ten Cate JW. A comparison of real-time compression ultrasonography with impedance plethysmography for the diagnosis of Deep Vein Thrombosis in symptomatic outpatients. New Engl J Med 1993; 329:1365-69.
4. White RH, McGahan JP, Daschbach MM, Hartling RP. Diagnosis of deep Vein Thrombosis using Duplex Ultrasound. Ann Intern Med 1989; 111:297-304.

5. Vandenbroucke JP, Rosing J, Bloemenkamp KWM, Middeldorp S, Helmerhorst FM, Bouma BN, et al. Oral contraceptives and the risk of venous thrombosis. New Engl J Med 2001; 344:1527-35.

6. Palareti G, Cosmi B, Legnani C, Tosetto A, Brusi C, Iorio A,et al D dimer testing to determine the duration of anticoagulation therapy. New Engl J Med 2006; 355:1780-89

7. Brener B, Tavori S, Lerner M, Tatarsky I, Lorber M. Association of lupus anticoagulant and anticardiolipin antibodies with thrombosis in patients with systemic lupus erythematosus, primary antiphospholipid antibody syndrome and other disorders. Isr J Med Sci 1992; 28:38-40.

8. Windyga J. Antiphospholipid antibodies as risk factor for venous thromboembolism. Pol Arch Med 2002; 108:1065-70.

9. Ginsberg JS. Antiphospholipid antibodies and venous thromboembolism. Blood 1995; 86:3685-87.

10. Kinuya K, Kakuda K, Matano S, Sato S, Sugimoto T, Asakura H, et al. Prevalence of deep venous thrombosis in the lower limbs and pelvis and pulmonary embolism in patients with positive antiphospholipid antibodies. Ann Nucl Med 2001; 15:495-97.

.....