Original Research Paper

Volume - 11 | Issue - 06 | June - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Pharmacy Practice

ANTI-TUBERCULAR TREATMENT INDUCED DEEP VEIN THROMBOSIS- A CASE REPORT

Priyanka Suhagiya*	Pharm. D Intern - Gandhi hospital, Secunderabad,Department of Pharm. D,CMR College of Pharmacy,Medchal, Hyderabad- 501401, Telangana State. India. *Corresponding Author
Akhila Sai Bazaru	Pharm. D Intern - Gandhi hospital, Secunderabad,Department of Pharm. D,CMR College of Pharmacy,Medchal, Hyderabad- 501401, Telangana State. India.
B Deepika	Pharm. D Intern - Gandhi hospital, Secunderabad,Department of Pharm. D,CMR College of Pharmacy,Medchal, Hyderabad- 501401, Telangana State. India.
Dr. Ramya Prabha	Assistant Professor, Department of Pharm. D, CMR College of Pharmacy, Medchal, Hyderabad- 501401, Telangana State. India.
Dr. Akhilesh Kumar Maurya	MBBS, MD (Gen medicine) JR-3, Gandhi Medical College and Hospital, Secunderabad, Telangana State. India.

ABSTRACT Deep vein thrombosis (DVT) is a serious condition that occurs when a blood clot forms in a vein located deep inside our body.Tuberculosis may induce at the peripheral blood - activation of mononuclear cells, and the interaction of these cells activated with mycobacterial products will induce increase in synthesis of factor tumour necrosis alpha and interleukin-6.

A 26-year-old Male patient was brought to hospital with complaints of Shortness of Breath -Grade III, ass. with palpitations and dry cough since a week. 2months before current admission He was diagnosed for tuberculosis and began treatment with combination of anti-tubercular treatment.The patient was on multidrug therapy. Multidrug therapy was withdrawn on the day of admission and diagnosis of ATT induced DEEP VEIN THROMBOSIS was made based on history of intake of anti-tubercular treatment, followed by impression of thrombosis.

KEYWORDS : Anti Tubercular drug, Deep vein thrombosis,

INTRODUCTION

India reports about 9 million cases per year out of which 1.3-5% are associated with deep vein thrombosis (DVT).

Deep vein thrombosis (DVT) is a serious condition that occurs when a blood clot forms in a vein located deep inside our body. A blood clot is a clump of blood that turns into solid state (Mary cushman 2007)

Venous thrombosis, comprising deep vein thrombosis (DVT) and pulmonary embolism (PE), occurs with an incidence of approximately 1 per 1000 annually in adult populations. Rates are slightly higher in men than women. About two-thirds of episodes manifest as DVT and one-third as PE with or without DVT (H Kouismi 2013)

Tuberculosis may induce at the peripheral blood - activation of mononuclear cells, and the interaction of these cells activated with mycobacterial products will induce increase in synthesis of factor tumour necrosis alpha and interleukin-6 9 (O. Turken 2002)

Case report:

A 26-year-old Male patient was brought to hospital with complaints of Shortness of Breath -Grade III, ass. with palpitations and dry cough since a week. 2months before current admission He was diagnosed for tuberculosis and began treatment with combination of anti-tubercular treatment (rifampicin 150mg, isoniazid 75mg, ethambutol 275mg, pyrazinamide 400mg).

Vitals on admission were BP: 110/80mmHg, PR: 130/min, SPO2:88% with RA, Currently on CPAP with Fio2:100%, Physical examination revealed Pallor +, B/L Pedal edema +(L>R), Facial Puffiness +.

Laboratory evaluation revealed- Blood urea: 43.53mg, Sr. Creatinine: 1.27mg, ALP: 122.6IU/L, TSB: 0.95mg/dl, Albumin: 2.66g/dl, Proteins: 5.56g/dl, GRBS:135mg/dl.

His liver function tests were normal with decreased levels of albumin and increasedlevels of blood urea. Colour Doppler Study: Impression: Chronic Partial thrombosis in Left CFV, SFV, left external iliac vein, popliteal vein, tibial vein.

Well Score :06

The patient was on multidrug therapy. Multidrug therapy was withdrawn on the day of admission and prescribed with Inj. Augmentin 1200mg thrice a day, Inj. UFH 18 IU/kg/hour, Tab. Apixaban 2.5mg twice a day, and other topical applications for symptomatic relief.

A diagnosis of ATT induced DEEP VEIN THROMBOSIS was made based on history of intake of anti-tubercular treatment, followed by impression of thrombosis.

After 25 days of complete treatment patient was discharged with following Prescription:

3. Tab. Rifampicin 150mg
4. Tab. Ethambutol 275mg
5. Tab. Pyrazinamide 400mg
6. Tab. Apixaban 2.5mg

DISCUSSION

Association of deep vein thrombosis with tuberculosis infection is seen in about 1.5% - 3.4% of the infection cases reported. The treatment is generally accompanied with anti-coagulants to decrease the risk of deep vein thrombosis (Binal Nithin Lodaria 2020)

General mechanism associated with it may be the haemostatic disturbances caused by severe infection. Decreased antithrombin III levels and protein C levels along with the elevated plasma fibrinogen and platelet aggregation levels might me the reason behind DVT in patients (Jayesh Sangani 2015)

Various studies conclude that significant increase in the level of plasma fibrinogen, along with impaired fibrinolysis associated with a decrease in factor antithrombin III, protein C and platelet aggregation.These contribute to induce a hypercoagulable state promoting the development of DVT. Cytokines activates the vascular intima and make thrombogenic endothelium. There by leading to a stimulation of hepatic synthesis of coagulation proteins.

First line anti tubercular drug – Rifampin may also increase the risk of developing DVT in patients. Since rifampin is an enzyme inducer is may cause disturbances in the coagulation and anti-coagulation proteinsthere by increasing the risk of DVT (H Kousimi 2013)

Use of rifampicin in the treatment regimen relatively increased the risk of developing DVT by 4.74% in the patients.A possible mechanism behind developing venous thrombosis might be due to enlarged lymph nodes where the haemostatic disturbances do not play any role. In such cases controlling DVT might be difficult(O. Turken 2002).

CONCLUSION

In patients diagnosed with pulmonary tuberculosis, early immobilization and physiotherapy can prevent the development of DVT

REFERENCES

1. Binal Prasad Muley, DhrumikaSheth, Anticoagulation in pulmonary TB induced deep vein thrombosis is it always warranted. Nitin Lodaria*, A case report: International Journal of Research in Medical Sciences Lodaria BN et al. Int J Res Med Sci. 2020 Jul;8(7):2678-2680
2. (PDF) Anticoagulation in pulmonary TB induced deep vein thrombosis is it always warranted: a case report (researchgate.net)
3. H Kouismi*, M Laine, J.-E. Bourkadi, G Iraqi, Association Deep venous thrombosis with pulmonary tuberculosis. A case report: EJCT (2013) 62,541-543. Science direct
4. https://www.sciencedirect.com/science/article/pii/S042276381300109X
5. Jayesh Sangani,Satarupa Mukherjee, Soumyadeep Biswas, Tarun Chaudhuri and Gautam Ghosh, Tuberculosis and Acute Deep Vein Thrombosis in a Paediatric Case, A case report : J Clin Diagn Res. 2015 Jun; 9(6): SD01–SD02 Published online 2015 Jun 1.
6. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4525571/
7. O. Turken,* E. Kunter,† M. Sezer,* E. Solmazgul,* K. Cerrahoglu,† E. Bozkanat,† A. Ozturk,* A. Ilvan†,Hemostatic changes in active pulmonary tuberculosis. INT J TUBERC LUNG DIS 6(10):927–932. Ingenta
8. https://www.ingentaconnect.com/ content/iuatld/ijtld/ 2002/00000006/ 00000010 /art 00013#Supp
9. Mary Cushman, Epidemiology and risk factors of venous thrombosis. Article: Semin hematol.2007 Apr: 44(2):62-69 .ncbi
10. https://pubmed.ncbi.nlm.nih.gov/17433897/