ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Isotretinion Induced Pulmonary Thromboembolism.

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ABSTRACT

Isotretinion is an orally administered retinoid that reduces production of sebum, corrects abnormal keratinization of follicles and is used in ACNE. Its highly teratogenic, and known to cause idiosyncratic reaction in the form of Fulminant Hepatic Failure And Depression. This is a rare presentation of Isotretinion induced idiosyncratic reaction in a 22yr old male patient with hyperhomocysteinemia presenting with Pulmonary Thromboembolism.

Keywords: isotretinion, pulmonary, thromboembolism, ACNE, teratogenic

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ISSN: 0975-8585

INTRODUCTION

Pulmonary embolism is one the leading cause of mortality worldwide. In this report we present a 22yr old male patient, who presented to casualty with pulmonary embolism and was managed with catheter guided intralesional thrombolysis [1]. Patient gave history of taking Tab isotretinion for acne 2 days prior to the onset of breathlessness. This is a rare case of isotretinion induced idiosyncratic reaction presenting with Pulmonary Thromboembolism.

Case Report

A 22 yr old male, 2nd yr dental student came to casualty with complains of breathlessness, cold with chest pain since 2 days. Patient had no H/O sweating, fever, cough or trauma. Patient has no H/O comorbidity or similar complains in the past.

Patient is K/C/O Acne for which he was started with Isotretinion 20mg HS by a Dermatologist 2 days prior to the onset of symptoms. Patient had consumed 2 doses of isotretinion, which he stopped on his own after onset of breathlessness.

On examination patient was afebrile, pulse of 100/min, regular, BP-100/70mmHg with SPO2-82% on room air. No pallor, cyanosis, edema, clubbing, icterus or lymphadenopathy.

Respiratory system examination showed B/L fine Ronchi. CVS showed tachycardia with no murmur or gallop. CNS and Per Abdomen examination was normal.

On investigation patients ECG showed sinus tachycardia with RV strain pattern. Hb-13.5 gm/dl , with Na – 140 mg/dl, K – 4.5 mg/dl, Urea – 25 mg/dl and creatinine – 1.0 mg/dl. CXR was normal and ECG showed sinus tachycardia with RV strain. Bilateral lower limb venous Doppler was normal.

2D-ECHO showed paradoximal septal motion, with RVSP of 70 mm Hg. CT pulmonary angiography showed heteroechoic thrombus in the right pulmonary artery which was suggestive of Pulmonary thromboembolism.

On further investigations patient was found to have homocysteinemia - 34 µmol/L(Normal range is upto 14 µmol/L). Patients protein C , protein S, Factor V leiden, Antithrombin III and fibrinogen levels were within normal limts. Anti-phospholipid antibody, prothrombin gene mutation and lupus anticoagulant were negative.

Patient was diagnosed to have acute pulmonary thromboembolism. He was immediately shifted to cath lab, and was planned for catheter guided intralesional thrombolysis. A catheter placed in right femoral vein and was guided upto the right pulmonary artery under fluoroscopy guidance. Intra lesional thrombolysis with Inj Tenecteplase was started. Inj tenecteplase 10 mg was given bolus into the thrombus followed by continous infusion of 1mg/hr for the next 20 hrs [2]. This was followed by inj Heparin 5000 units iv 8 hrly for the next 5 days. Repeat ECHO showed reduced RVSP- 30 mmHg. Patient was put on oral anticoagulation with Tab Dabigatran 150mg twice daily for 6 months [3].

DISCUSSION

Isotretinion is an orally administered retinoid that reduces production of sebum, corrects abnormal keratinization of follicles and is used in ACNE.

• Common Side effects are:

Highly teratogenic(Class X)
Cheilitis, dryness of skin, eyes.
Rise in serum lipids and intracranial tension
IDIOSYNCRATIC reaction in the form of FULMINANT HEPATIC FAILURE and DEPRESSION[4] have also been reported

ISSN: 0975-8585

Isotretinion is been shown to cause deep venous thrombosis[5]. But, till date there is no case report describing acute pulmonary thromboembolism in relation with isotretinoin intake.

- Although, our patient also had hyperhomocystinemia, isotretinoin was the cause for trigerring the chain of events.

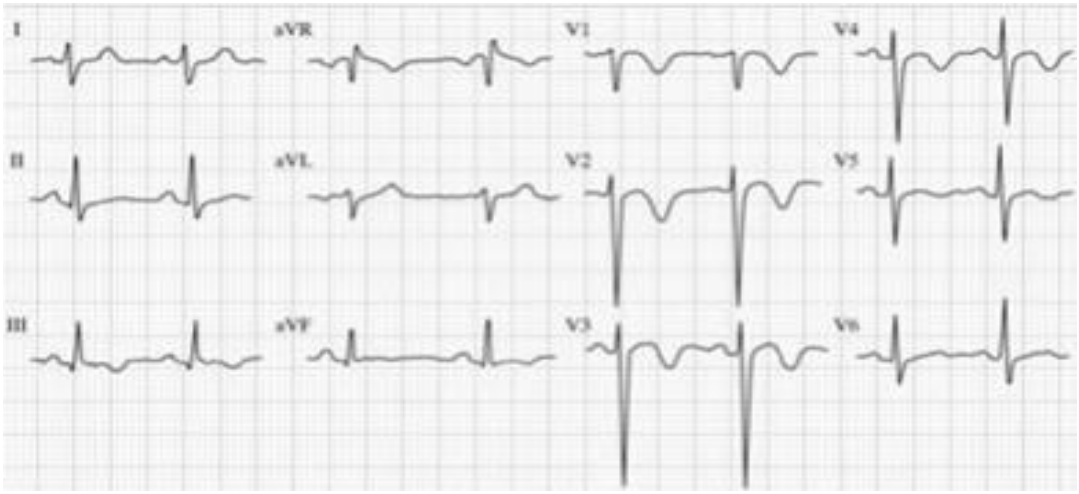

Figure 1: ECG S/O of Pulmonary Embolism

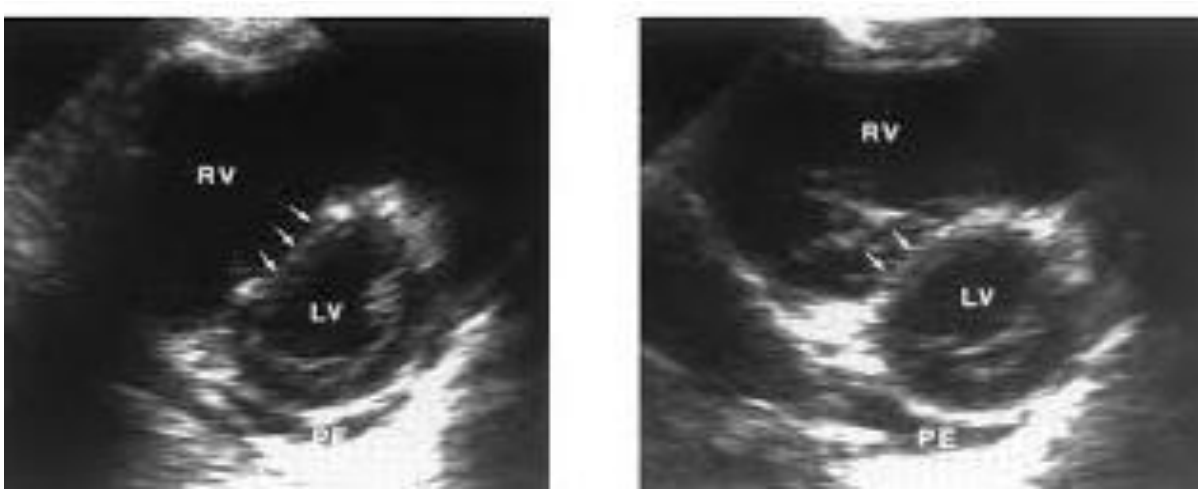

Figure 2: 2D-ECHO

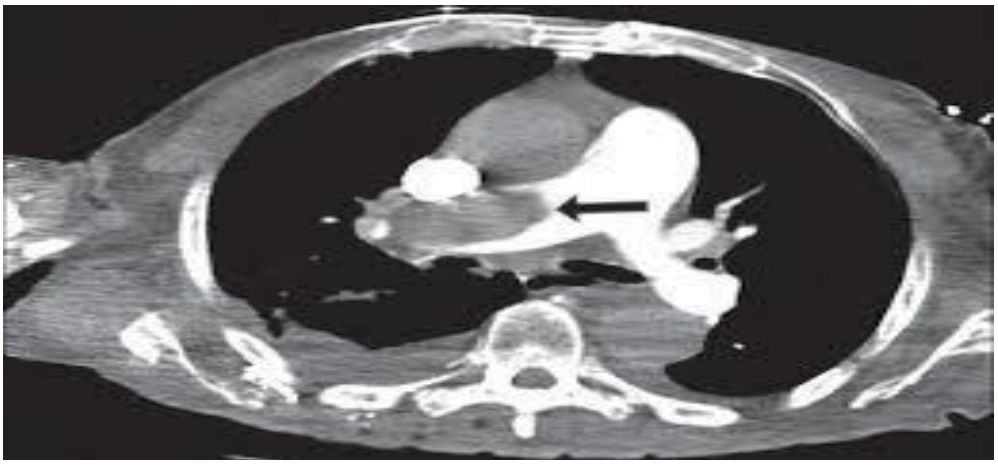

Figure 3: CT Pulmonary Angiography showing Rt pulmonary artery thrombus

Other Risk Factors

Hyperhomocysteinemia:

- Polymorphisms of methylene tetrahydrofolate reductase as well as hyperhomocysteinemia have been shown to be independent risk factors for venous thrombosis

TREATMENT

Tenecteplase is a recombinant fibrin specific plasminogen

- Derived from native tPA
- Higher fibrin specificity
- Greater resistance to inactivation by its endogenous plasminogen activator inhibitor – 1(PAI-1) compared to native tPA.

Dabigatran

- Oral thrombin inhibitor.
- Does not require any PT/INR monitoring in comparison with warfarin.

Other available options

- Streptokinase (2,50000 units iv over 30 mins, followed by 1 lakh units per hr for 24 hrs)
- Heparin infusion (80 units/kg bolus, followed by 18units/kg infusion)
- Oral Warfarin therapy.

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