Case Report

Olanzapine induced DVT: A Case Report

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Abstract

Deep Vein Thrombosis (DVT) is a serious life threatening event which might not be paid much attention in Psychiatric setting. In this paper, a case of DVT following the use of Olanzapine is presented. The patient was in good general physical health and had no personal or familial history of DVT. There were no known risk factors for DVT. The patient was not overweight (BMI < 25) but she suffered from DVT after initiating Olanzapine. Conclusion: Risk of DVT exists in patients under treatment with atypical antipsychotics in spite of no pre existing risk factor.

Keywords: Atypical antipsychotics, Deep venous thrombosis, Psychiatry, Olanzapine.

INTRODUCTION

Deep venous thrombosis (DVT) and pulmonary embolism (PE) are frequent illnesses with an annual incidence of more than 1 per 1000 persons and a mortality rate above 15% in the first 3 months after diagnosis.[1] Both illnesses have a common pathogenesis and are referred to as venous thromboembolism (VTE). Many studies about this subject have been performed in medical and surgical settings. In psychiatric settings this problem is often ignored.

Known risk factors for development of DVT and PE during medical and surgical hospitalizations include congenital factors (i.e. hereditary thrombophilia like Factor V Leiden, prothrombin deficiency) and acquired factors (advanced age, obesity, former DVT or PE, surgery, trauma, neoplasm, heart, kidney and bowel diseases, estrogen hormone therapy, tamoxifen, dehydration, immobilization). These risk factors can induce the formation of a DVT by three mechanisms (Virchow's triad): slowing down of the blood velocity, damage to the vessel wall and hypercoagulability.[2]

Antipsychotics could induce pathological blood clotting via sedating and immobilisng the patients and by inducing Metabolic syndrome such as obesity. Such symptoms could be missed in Psychiatry settings due to sedation and psychopathological symptoms.[3]

In this report, a case of a female patient admitted in Psychiatry ward who developed DVT following the use of Olanzapine is presented. No personal or familial history of DVT was present. Her condition suggests a possible association between atypical antipsychotics and DVT in the absence of pre existing risk factors.

CASE REPORT:

Ms SD, a 24yr old separated Nepali female from Bhojpur, was brought for admission to NMCTH with history of irritability, restlessness, shouting, spontaneous singing and dancing, over talkativeness, self talking, disinhibited talk, decreased need for sleep. Patient had been on foreign employment to Dubai since the last 8 months. History of similar episode 2years back, was diagnosed as Bipolar Affective Disorder (BPAD), Manic episode. History of non compliance to medications since 1year. She also had no identified cardiovascular nor any another risk factor for DVT. On Physical examination, no abnormality was detected. BMI- 23kg/m^2 .On Mental status examination, General Appearance and Behaviour: increased psychomotor activity, uncooperative behavior, shouting and singing behavior,

hallucinatory behavior were noted. Speech was irrelevant and coherent, increased tone, volume and rate, decreased reaction time, Mood: predominantly irritable at times elated. Social judgment: impaired .Insight grade 1. Baseline investigations: Complete Blood Count, Erythrocyte Sedimentation Rate, Urine Routine, Kidney Function Test, Liver Function Test , Random blood sugar, VDRL, HIV, HBsAg, Anti-HCV were within normal limits. She was started on oral antipsychotics Olanzapine 10mg/day and Sodium Valproate 600mg/day. On the 8th day of admission pt. complained of pain in the left leg, On examination: swelling of left leg up to the shin was noted. Serum for uric acid was sent which was within normal limits. The next day, pt. complained of pain and inability to walk. On examination: swelling of the entire left leg up to the thigh, erythema+, local rise of temperature, tenderness+. DVT was suspected and Cardio vascular Surgical consultation was done after which PT INR, USG color Doppler was performed. It showed deep vein thrombosis of the left lower limb involving superficial and central femoral vein, popliteal vein. Olanzapine was stopped and typical antipsychotic was started. She was started on low molecular weight Heparin intravenously and oral Warfarin. In a few days, swelling subsided and patient recovered.

DISCUSSION:

The link between conventional antipsychotic medications and DVT was first suggested in 1950s. Though there are few case reports maintaining association between atypical antipsychotics and DVT, they are mainly related to Clozapine.4 Atypical antipsychotics are associated with sedation, weight gain, dyslipidemia all of which could predispose to DVT. These factors could unlikely be the etiology for early thromboembolism. Wagge and Gedde –Dahl[5] reported for the first time a case of 28yr old man who developed a pulmonary embolism after starting treatment with Olanzapine.

A previous case study described four patients in whom Olanzapine was associated with DVT over a study period of 2years.Age group of patients ranged from 37-54yrs, who were on Olanzapine dose range 5-20mg and duration of treatment with olanzapine being 7weeks to 17months.[6]

A previous case study described three elderly patients (an 89- year – old male, a 78 – year – old male and an 83- year – old female) in whom Olanzapine therapy was associated with VTE.[7]

Biological Mechanism for development of DVT by Olanzapine is not known but a number of hypotheses have been suggested. The increased risk may be the result of drug induced sedation, obesity, hyperlipidemia, anti-phospholipid antibody and increased activity in coagulation system.[8]

Antipsychotics like Olanzapine and Risperidone that are antagonist of 5 HT2 receptors, can induce increase of serotonin which in turn might provoke enhanced aggregation of platelets, thereby increasing the risk for thrombosis.[9]

Patient being treated with Olanzapine should be monitored clinically for venous thromboembolism to ensure early detection and intervention. A possible discontinuation of treatment with Olanzapine should be considered if diagnosis of venous thromboembolism is made.

CONCLUSION:

Psychiatrists need to remain aware of the clinical presentation of Deep Vein Thrombosis, because many patients present with subtle changes or could even develop sudden complication, i.e. pulmonary embolism. Therefore, regular monitoring should be a part of the evaluation of patients who are at a risk of developing symptoms.

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