Acute Flash Pulmonary Edema; A Rare Side Effect Of Abiraterone

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Introduction

Abiraterone is a steroidal CYP17A1 inhibitor a novel drug for castrate resistant prostate cancer (CRPC). It is generally well tolerated in patients, although fluid retention, hypokalemia and hypertension may require management but rarely lead to acute presentation of pulmonary edema requiring termination of drug.

Case:

An 85 year old male with castrate resistant prostate cancer presented with acute onset of shortness of breath. He had noticed progressive bilateral leg swelling for past 4 days. He was started on abiraterone 1000 mg daily along with prednisone 5 mg twice a day 2 weeks prior to this encounter. He has a past history of coronary artery bypass graft ten years ago with no active ischemic symptoms, well controlled hypertension and hyperlipidemia. On examination, his blood pressure (BP) was 205/100 mm hg, respiratory rate 25/min, pulse 86/min and oxygen saturation 85% on room air. He had elevated JVD, crackles up to half of both lung fields and 3+ pitting edema up to the knees. Laboratory evaluation was significant for serum potassium of 2.3 mmol/L, pro-BNP 15075 pg/ml and mild elevation in troponin 0.12 ng/ml. Chest X-ray showed pulmonary vascular congestion and fluffy infiltrates. Electrocardiogram was unchanged from previous one. Echocardiogram showed normal ejection fraction, grade II/IV diastolic dysfunction with mild pulmonary HTN and no wall motion abnormalities. Patient was treated with Intravenous (IV) lasix 40 mg and started immediately on potassium replacement. Due to respiratory distress he was started on noninvasive positive pressure ventilation. BP was managed effectively with cautious diuresis, serial electrolyte measurements and lisinopril.

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Conclusion:

Abiraterone acetate is an inhibitor of CYP17, which is an important enzyme in testosterone and estrogen synthesis. Mineralocorticoid excess and hypokalemia are known side effects of abiraterone due to CYP17 inhibition. Prednisone is added with abiraterone to enhance its anti-tumor activity by lowering ACTH and suppresses steroids upstream of CYP17 as well as to prevent mineralocorticoid excess. In the clinical trial studying its effectiveness, cardiac disorders as adverse events were reported as 23.3 %, with only 8% as severe Grade 3-4 adverse events, however patients with significant and active heart disease were excluded. Our patients' presentation of flash pulmonary edema secondary to hypertensive urgency created the therapeutic dilemma of effective diuresis, limited by severe hypokalemia and high risk of life-threatening arrhythmias. Using the Naranjo Adverse Drug Reaction probability scale a score of 6 was calculated; abiraterone was a probable cause for our patient's episode of acute pulmonary edema.

This case highlights that clinicians should be aware of the possibility of this rare, albeit serious adverse effect when caring for patients taking abiraterone and should emphasize on rigorous patient education, close monitoring and early recognition