

Trigeminy Premature Ventricular Beat related to Osimertinib for an EGFR Exon19del Mutation Lung Adenocarcinoma

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2. Keywords

Trigeminy; Premature ventricular beat; Osimertinib; Lung adenocarcinoma

1. Abstract

Non-small cell lung cancer benefit a lot based on the targetable oncogenic gene detection and subsequent tyrosine kinase inhibitor (TKI). However, adverse event administration was a new challenge for treatment management strategies. Previous studies demonstrated a third generation epidermal growth factor receptor (EGFR) osimertinib to be high efficacy and well tolerant in EGFR mutation positive NSCLC with or without T790M mutation. The most common side effect was rash and diarrhea. However, there was some rare adverse event observed in real-world outcomes. From Sept 20, 2017 to Nov 28, 2017 in our center, one of eleven patients received osimertinib as second line treatment with the new occurring EGFR exon20T790M mutation presented with trigeminy premature ventricular beat (PVB). His phenomenon appeared after treatment of osimertinib for 7 days. PVB especially for TPVB was easily misdiagnosed with some heart illness. Medication and cancer history, Holter will contribute to the diagnosis. Although uncommon, it may lead to ventricular arrhythmia, even as ventricular tachycardia or ventricular fibrillation. No conformed method to prevent or treat this kind of disease. Maybe first step is the control the heart rate. Reducing the dose of osimertinib will be considered as further choice unless there was no response with the treatment of metoprolol. So, full attention must be paid for such TKI treatment patients with palpitate and flustered. Hence, an increased awareness among oncologists could allow for early recognition and appropriate management of osimertinib induced trigeminy premature ventricular beat.

3. Case Presentation

A 42-year-old non-smoking male came to the hospital with cough and sputum for one month. Computed Tomography (CT) showed primary tumor located at lower lobe of right lung with lymph node metastases in mediastinum and bone metastasis. A CT-guided biopsy of the right lung nodule was performed and showed lung adenocarcinoma. The patient tested positive for EGFR exon 19del mutation by next-generation sequencing (NGS, Borning Rock, Guangzhou, China), and he began undergoing erlotinib 150 mg orally three times daily. After 10 months, he was assessed as having progressive disease. After rebiopsy of the left lung nodule, adenocarcinoma was identified. Next-generation sequencing established a change in mutation type to EGFR exon 19del and EGFR exon20T790M. The patient's treatment was changed to osimertinib 80 mg orally

once daily. However, the patient was presented with palpitate, flustered one week later and evaluated with grade 3 Trigeminy Premature Ventricular Beat Common Terminology Criteria for Adverse Events (CTCAE4.03) (Figure 1A, B). Holter showed the mean ventricular rate was 83 (62-134) and total frequent ventricular premature beat was 17554. He was treated with Metoprolol and obtained response.

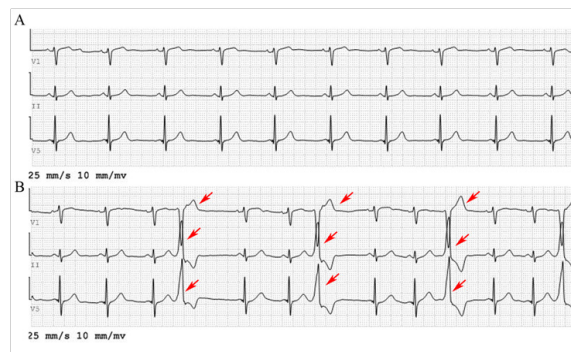


Figure 1: ECG of the patient. Panel A was before osimertinib, Panel B was after osimertinib. Red arrows show the large QRS. The speed and voltage was describing in the left corner.

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4. Discussion

In the report on FLAURA, Tony and Rama lingam reported osimertinib showed superior efficacy and well-tolerant compared with standard EGFR-TKIs [1,2]. Until now, there were no data about premature ventricular beat (PVB) related with osimertinib, except for 10% prolonged QT interval on electrocardiograph (ECG) for any grade. Premature ventricular beat, often been neglected, was associated with troublesome symptoms [3], especially with cardiovascular disease [4]. However, in our site, among 11 patients received osimertinib, one patient was diagnosed with grade 3 premature ventricular beat. We firstly reported a lung adenocarcinoma diagnosed with PVB and presented palpitate after receiving osimertinib for one week without history of cardiovascular disease. After treated with metoprolol, response was obtained for this patient.

Frequent premature ventricular beat was a highly severe complication of drug administration which may be potentially life-threatening if unrecognized and/or misdiagnosed [5]. Although uncommon, it may lead to ventricular arrhythmia, even as ventricular tachycardia or ventricular fibrillation. Hence, an increased awareness among oncologists could allow for early recognition and appropriate management of osimertinib-induced trigeminy premature ventricular beat. Suitable intervene should be added for such patients to avoid side effect related treatment failure.

5. Ethics

The patient signed and provided written informed consent for the publication of this case report.

6. Acknowledgment

Yongchang Zhang collected the data and drafted the manuscript. Nong Yang modified the manuscript. This work was partially supported by the Hunan Natural Science Foundation (2018JJ2238)

References

1. Mok TS, Wu V, Ahn MJ. Osimertinib or Platinum-Pemetrexed in EGFR T790M-Positive Lung Cancer. *N Engl J Med.* 2017; 376(7): 629-640.
2. Soria JC, Ohe Y, Vansteenkiste J. Osimertinib in Untreated EGFR-Mutated Advanced Non-Small-Cell Lung Cancer. *N Engl J Med.* 2018; 378(2): 113-125.
3. Yusuf S, Camm AJ. The sinus tachycardias. *Nat Clin Pract Cardiovasc Med.* 2005; 2(1): 44-52.
4. Narichania AD, Schleifer JW, Shen WK. Managing the patient with episodic sinus tachycardia and orthostatic intolerance. *Cardiol J.* 2014; 21(6): 665-73.
5. Latchamsetty R, Bogun F. Premature Ventricular Complex Ablation in Structural Heart Disease. *Card Electrophysiol Clin.* 2017; 9(1): 133-140.