Ticagrelor Induced Diffuse Alveolar Hemorrhage after PCI Intervention

Hirrah Sajjad, MD; Ryan Chan, MD; Renni R Panicker, MD;
Saifullah Shahid, MD; W. Dwayne Brown, MD; Michael B. Fashho, MD
Louisiana State University Health Sciences Center at Ochsner University Hospital & Clinics
Department of Internal Medicine- Lafayette, LA

Introduction

Diffuse alveolar hemorrhage (DAH) is a medical emergency that must be immediately recognized and treated. It is characterized by bilateral pulmonary infiltrates, hypoxia, hemoptysis, and/or falling blood count.

Treatment ranges from supportive measures, to withdrawal of offending agents, steroid administration, plasmapheresis, and/or direct immunosuppression.

Here we will discuss a case of Ticagrelor (Brilinta) induced DAH. Ticagrelor is an orally administered direct-acting $P2Y_{12}$-receptor antagonist that bind reversibly and non-competitively

Case Description

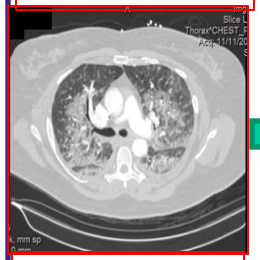
- A 56 -year-old African-American female with a history of hypertension, hyperlipidemia, diabetes, and tobacco abuse presents with one-week of episodic, sharp, pressure-like, substernal chest pain that worsened with activity.
- EKG at admission revealed sinus tachycardia with ST elevations in the infero-lateral leads and elevated troponin-I.
- She was given Aspirin, started on a heparin drip, and underwent emergent PCI with DES x 2 to the RCA and Circumflex artery.
- Post-procedure she was bolused with tirofiban, loaded with ticagrelor $180\ mg$, and transferred to the ICU.
- In the morning she was started on dual antiplatelet therapy (DAPT) with Aspirin 81mg and Brilinta 90mg, Atorvastatin 80mg, and Lopressor 25 mg BID
- Meanwhile, overnight she developed SOB and hemoptysis.

Physical Exam/Laboratory Data

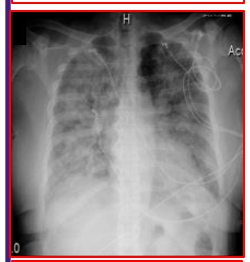
- Vitals were concerning for fever, tachycardia, and tachypnea.
- Additional physical exam findings were significant for bilateral rhonchi and coarse breath sounds.
- Labs revealed hyponatremia, elevated BNP, leukocytosis and a hemoglobin decrease from 13.5 to 11.5.
- CT Angiography revealed diffuse bilateral infiltrates and CXR revealed worsening bilateral opacities concerning for DAH.

Diagnostic Imaging

Diffuse pulmonary infiltrates consistent with pulmonary edema/ARDS

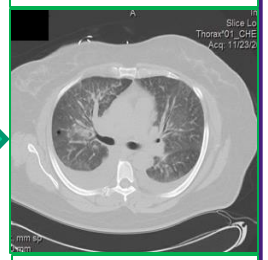


CT Thorax-Chest PE

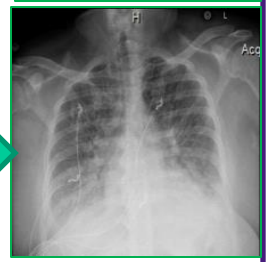


XR Chest 1 View

Resolution of bilateral pulmonary infiltrates after stopping Brilinta



CT Thorax-Chest PE



XR Chest 1 View

Clinical Course

- Brilinta was immediately discontinued and replaced with Plavix. Broad spectrum antibiotics were started.
- Ultimately, she was intubated for acute hypoxemic respiratory failure, DAPT was discontinued, and methylprednisolone administered.
- She was extubated after a bronchoalveolar lavage, which revealed blood-tinged aspirate without signs of active bleeding.
- Aspirin and Plavix were restarted once her hemoptysis resolved. Her shortness of breath improved as well as her lab and imaging findings.
- She was discharged home with home oxygen with close pulmonology and cardiology follow-up

Discussion

- This case highlights the need for immediate recognition of Ticagrelor induced DAH and discontinuation of therapy in preventing life threatening progression to acute hypoxic respiratory failure.
- This can be recognized via clinical symptoms/signs, imaging, and/or worsening respiratory status on ABG

References

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