**RECURRENT PULMONARY EMBOLISM DESPITE BEING ON RIVAROXABAN**

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**Introduction:**Rivaroxaban is an oral factor-Xa inhibitor that demonstrated similar efficacy to conventional therapy for the treatment of venous thromboembolism (VTE). In this case study, we report a 36-year-old female who experienced recurrent acute bilateral pulmonary embolism (PE) despite being treated with Rivaroxaban.

**Case Report:**A 36-year-old current smoker, obese female with history of first unprovoked pulmonary embolism, on Rivaroxaban 20mg daily with breakfast who presented with acute onset shortness of breath, chest pain, tachycardia, tachypnea, with blood pressure of 113/76 mmHg and oxygen saturation of 97% on room air. Electrocardiogram showed sinus tachycardia with signs of right heart strain and S1Q3T3-pattern. CT-pulmonary angiogram showed large hypodense areas in bilateral main pulmonary arteries suggestive of PE. Transthoracic echocardiogram showed normal ejection fraction of 59%, normal right ventricular systolic function with features of right ventricular strain. Workup for possible underlying conditions that may increase risk of hypercoagulability came back negative. Patient was started on intravenous unfractionated Heparin after which her symptoms improved. Patient was later discharged on Fondaparinux 10mg subcutaneous daily. On follow up 1 month later, a repeat CT-pulmonary angiogram showed that the previously seen large bilateral PE has cleared.

**Discussion:**We reviewed the available literature on failure of Rivaroxaban and found that there are 2 main causes for recurrent VTE; underlying conditions and subtherapeutic drug levels. The most common underlying conditions that can result in recurrence are cancer, antiphospholipid-syndrome, vasculitis, and pregnancy. Subtherapeutic drug levels can be caused by poor compliance, interactions with other drugs or food, or inappropriate dosing. It is worth mentioning that because absorption of Rivaroxaban at 15-20mg doses decreases from nearly 100% to 66% under fasting conditions, it is recommended that VTE patients take Rivaroxaban with a meal. Our patient was compliant and took appropriate dose of Rivaroxaban with food, and none of her home medications were known to have interaction with Rivaroxaban.