Anticoagulants

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Treatment failure: 5 case reports

In a cohort case series, five men aged between 70-92 years were described, who exhibited treatment failure during treatment with apixaban, enoxaparin-sodium, warfarin or rivaroxaban for pulmonary embolism or deep vein thrombosis (DVT) [*not all routes and dosages stated*].

Case 1 (A 77-year-old man): The man who had atrial fibrillation and hyperlipidaemia, presented at 4 days after the diagnosis of COVID-19. He had been receiving oral apixaban 5mg twice daily for prophylaxis of pulmonary embolism in his chronic atrial fibrillation. He was also receiving atorvastatin and metoprolol as regular medications. After hospitalisation, he started receiving off-label therapy with dexamethasone and cefepime for COVID-19. He also received convalescent-anti-SARS-CoV2 plasma [convalescent plasma] and supplemental oxygen for the treatment of COVID-19. On day 15, he was found to have PE (apixaban failure). Apixaban was discontinued and he started receiving enoxaparin-sodium [enoxaparin] 1 mg/kg for every 12 hours. However, his respiratory status continued to deteriorate; thus, he required mechanical ventilation. He then developed multi-system organ failure, which eventually led to his death.

Case 2 (A 70-year-old man): The man presented at 2 days after COVID-19 symptoms onset. He had a history of coronary artery disease, paroxysmal atrial fibrillation, congestive heart failure, hypertension, dyslipidaemia, chronic obstructive pulmonary disease (COPD) and diabetes type 2. He had been receiving oral apixaban 5mg twice daily for prophylaxis of DVT in paroxysmal atrial fibrillation. His other medications included Aspirin, carvedilol, dulaglutide, furosemide, insulin–glargine, lansoprazole, losartan, montelukast and simvastatin. After hospitalisation, he started receiving off-label therapy with dexamethasone. He also received convalescent-anti-SARS-CoV2 plasma and supplemental oxygen for the treatment of COVID-19. During routine investigations, he was found to have DVT (apixaban failure). Apixaban was discontinued and he started receiving treatment with enoxaparin-sodium 1 mg/kg for every 12 hours and warfarin. Later on, he was discharged to a skilled nursing facility.

Case 3 (A 76-year-old man): The man presented at 14 days after diagnosis of COVID-19, due to worsening of shortness breath. He had a history of Atrial fibrillation, CHF, dyslipidaemia, hypertension, asthma and diabetes type 2. He had been receiving oral rivaroxaban 20mg daily for prophylaxis of PE in atrial fibrillation. His other medications included atorvastatin, bisoprolol, buspirone, digoxin, dulaglutide, escitalopram, esomeprazole, insulin–lispro, levothyroxine-sodium, losartan, pregabalin, ropinirole, tamsulosin and trazodone. After hospitalisation, he started receiving off-label therapy with dexamethasone, cefepime and linezolid for the treatment of COVID-19. He also received convalescent-anti-SARS-CoV2 plasma and high flow nasal cannula for the treatment of COVID-19. During routine investigations, he was found to have PE (rivaroxaban failure). Therefore, rivaroxabin was discontinued and he started receiving enoxaparin-sodium 1 mg/kg every 12 hours. Afterwards, his therapy was switched backed to rivaroxaban and he was discharged to inpatient rehabilitation.

Case 4 (An 80-year-old man): The man presented with increasing shortness of breath about a week after COVID-19 symptom onset. He had a history of coronary artery disease, dyslipidaemia, hypertension and a history of PE and DVT. He had been receiving oral rivaroxaban 20mg daily for DVT. His other medications included amiodarone, aspirin, atorvastatin, furosemide, insulin-aspart, insulin-detemir, levothyroxine-sodium, mirtazapine and sertraline. After admission, he started receiving off-label therapy with dexamethasone, cefepime and linezolid for COVID-19. He also received convalescent-anti-SARS-CoV2 plasma for COVID-19. Thereafter, he was kept on mechanical ventilation and his therapy was switched to enoxaparin-sodium 1 mg/kg twice daily (rivaroxaban failure). He continued receiving enoxaparin-sodium for further treatment; however, he eventually died after some days.

Case 5 (A 92-year-old man): The man presented after experiencing productive cough for 10 days. He was diagnosed with COVID-19. He had a medical history of paroxysmal atrial fibrillation, congestive heart failure, dyslipidaemia, coronary artery disease, ischaemic cardiomyopathy, chronic lymphocytic leukaemia, sick sinus syndrome, anaemia of chronic disease, chronic pleural effusion and he also underwent coronary artery bypass grafting. He had receiving treatment with oral apixaban 2.5mg twice daily for prophylaxis of DVT in paroxysmal atrial fibrillation. He had also been receiving carvedilol and ferrous-sulphate. After hospital admission, he started receiving off-label therapy with dexamethasone, cefepime and linezolid for the treatment of COVID-19. He also received convalescent-anti-SARS-CoV2 plasma for COVID-19. Thereafter, he was kept on high-flow cannula. On admission, the dose of apixaban was increased to 5mg twice daily. During routine investigations, he was found to have DVT (apixaban failure). He was temporarily switched to enoxaparin-sodium 1 mg/kg twice daily and then he was switched back to apixaban (enoxaparin-sodium failure). On day 8, he was clinically diagnosed with stroke. He eventually died after some days [*not all causes of death stated*].

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