

Heparin/nafamostat

S

Bleeding, hyperkalemia and haemothorax: case report

A 63-year-old man developed bleeding, hyperkalemia and haemothorax during treatment with heparin and nafamostat for circuit thrombosis prophylaxis.

The man was transferred to the hospital with acute respiratory failure because of coronavirus disease 2019 (COVID-19) pneumonia. Following 5 days, his respiratory failure worsened. Venous-venous extracorporeal membrane oxygenation (V-V ECMO) was provided through the right common femoral vein and right jugular vein. Throughout ECMO support, he received IV heparin 35000 units/day which was increased to 48000 units/day. Though the activated partial thromboplastin time was 88 seconds, circuit thrombosis was observed during ECMO therapy. As V-V ECMO could not oxygenate his blood, replacement of the ECMO membrane was essential 4 days following start of V-V ECMO insertion. Following the new membrane insertion, circuit thrombosis developed rapidly. On day 11, he received nafamostat 0.06 mg/kg/h infusion continuously into ECMO, in combination with IV heparin 24000 units/day in order to prevent circuit thrombosis. During the combination therapy, circuit thrombosis did not develop. However, on day 15, he developed hyperkalemia and haemothorax. Blood tests revealed decreased fibrinogen while D-dimer had increased, indicating potential bleeding caused by the haemothorax. Based on the findings, a diagnosis of hyperkalemia, bleeding and haemothorax associated with combination therapy of heparin and nafamostat was made [*durations of treatment to reactions onset and outcomes not stated*].

The man's treatment with nafamostat was discontinued. Rapid blood loss because of haemothorax required transfusion of 16 units of erythrocytes [red blood cells] and 12 units of fresh-frozen plasma over a 48 hour period. His treatment with heparin was continued. V-V ECMO was stopped successfully on day 32. Tracheostomy was performed when oxygenation was recovered. On day 52, he was moved to another hospital for rehabilitation.