

## Multiple drugs

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**Drug ineffectiveness: case report**

A 72-year-old man showed drug ineffectiveness with landiolol, amiodarone, ivabradine and digitoxin during treatment for tachycardic atrial fibrillation (AF) [routes not stated].

The man, who was diagnosed with COVID-19, was quarantined at home. He was admitted to the intensive care unit due to acute respiratory failure and delirium. His anamnesis revealed a smoking history with cessation 20 years prior, non-insulin-dependent type 2 diabetes mellitus, aortic dissection type B, persistent atrial fibrillation, and chronic obstructive sleep apnoea syndrome. His chronic medications included apixaban, gabapentin, bisoprolol and metformin. Upon arrival, he was normotensive with an irregular heart rhythm and appeared perspiring and exhausted. He required intubation due to severe hypoxaemia and subsequently, sufficient oxygenation and normocapnia were achieved. Tachycardic atrial fibrillation was successfully electrically cardioverted. Bedside echocardiography revealed globally reduced left ventricular systolic function (LVEF) with ejection fraction (EF) of 30% consistent with heart failure. He received supportive therapy with norepinephrine [noradrenaline] and dobutamine. During hospital admission, he received argipressin, hydrocortisone, continuous landiolol (initial dose 8 µg/kg/min) to control any recurrence of tachycardic AF. Chest X-ray revealed bilateral consolidations compatible with acute respiratory distress syndrome. Laboratory results revealed acute kidney injury. Continuous renal replacement therapy (CRRT) was administered and upgraded with an immunoabsorbant filter for suspected cytokine storm. More frequent tachycardic AF episodes did not show any response to electrical cardioversion, escalation of landiolol up to 40 µg/kg/min and amiodarone 300mg in 30 minutes and 38 mg/h over 24 hours thereafter. Ivabradine 5mg twice daily and digitoxin 0.25mg daily were administered and were ineffective.

Progressing heart failure was noted secondary to tachycardic AF. Levosimendan was initiated, which led to a transient positive effect. In echocardiographic controls, pericardial effusion was noted, which led to pericardial tamponade that was successfully drained by pericardiocentesis. Haemodynamics had improved transiently, and LVSF/EF deteriorated rapidly. Due to the multiple comorbidities including COVID-19 associated cardiogenic shock risk–benefit ratio was assessed and a decision against extracorporeal membrane oxygenation (ECMO) was made. Nine days following ICU admission, he died from multiorgan failure.

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